

## SEQUENCE LISTING

<110> PTC Therapeutics, Inc.

<120> METHODS FOR IDENTIFYING COMPOUNDS THAT MODULATE UNTRANSLATED  
REGION-DEPENDENT GENE EXPRESSION AND METHODS OF USING SAME

<130> 10589-012-228

<140>  
<141>

<150> 60/441,637  
<151> 2003-01-21

<160> 94

<170> PatentIn version 3.2

<210> 1  
<211> 14  
<212> DNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Motif

<220>  
<221> misc\_feature  
<222> 3, 7, 8, 11  
<223> n = a, t, c, or g

<220>  
<221> misc\_feature  
<222> (7)..(8)  
<223> This represents one form of the sequence as described, other forms  
described may have up to five nucleotides in this variable region

<400> 1  
ggntggnnng ntgg 14

<210> 2  
<211> 14  
<212> DNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Motif

<220>  
<221> misc\_feature  
<222> 3, 4, 7, 8, 11, 12  
<223> n = a, t, g or c

<220>  
<221> misc\_feature  
<222> (2)..(12)

<223> This represents one form of the sequence as described, other forms described have longer variable regions, typical is 2 - 10 nucleotides

<400> 2  
ggannggnngg nngg 14

<210> 3  
<211> 14  
<212> DNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Motif

<220>  
<221> misc\_feature  
<222> 3, 4, 7, 8, 11, 12  
<223> n = a, t, g, or c

<220>  
<221> misc\_feature  
<222> (2)..(12)  
<223> This represents one form of the sequence as described, other forms described have longer variable regions, typical is 2 - 10 nucleotides

<400> 3  
ggnnggnngg nngg 14

<210> 4  
<211> 19  
<212> RNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Motif

<400> 4  
ccccrccuc uuccccaag 19

<210> 5  
<211> 152  
<212> DNA  
<213> Homo sapiens

<400> 5  
gcagaggacc agctaagagg gagagaagca actacagacc cccctgaaa acaaccctca 60  
gacgccacat cccctgacaa gctgccaggc aggttctctt cctctcacat actgaccac 120  
ggctccaccc tctctcccct ggaaaggaca cc 152

<210> 6  
<211> 792  
<212> DNA

<213> Homo sapiens

<400> 6

tgaggaggac gaacatccaa ccttcccaaa cgcctccct gccccaatcc ctttattacc	60
ccctccttca gacaccctca acctcttctg gctcaaaaag agaattgggg gcttagggtc	120
ggaacccaag cttagaactt taagcaacaa gaccaccact tcgaaacctg ggattcagga	180
atgtgtggcc tgcacagtga attgctggca accactaaga attcaaactg gggcctccag	240
aactcactgg ggcctacagc tttgatccct gacatctgga atctggagac cagggagcct	300
ttgggttctgg ccagaatgct gcaggacttg agaagacctc acctagaaat tgacacaagt	360
ggaccttagg ccttcctctc tccagatgtt tccagacttc cttgagacac ggagcccagc	420
cctcccatg gagccagctc cctctattta tgtttgact tgtgattatt tattatttat	480
ttattattta tttatttaca gatgaatgta tttatttggg agaccggggg atcctggggg	540
acccaatgta ggagctgcct tggtcagac atgttttccg tgaaaacgga gctgaacaat	600
aggctgttcc catgtagccc cctggcctct gtgccttctt ttgattatgt tttttaaaat	660
atztatctga ttaagttgtc taaacaatgc tgatttggtg accaactgtc actcattgct	720
gagcctctgc tccccagggg agttgtgtct gtaatcgccc tactattcag tggcgagaaa	780
taaagtttgc tt	792

<210> 7

<211> 21

<212> RNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: Motif

<400> 7

auuuuuuuau uuauuuuuu a	21
------------------------	----

<210> 8

<211> 40

<212> DNA

<213> Homo sapiens

<400> 8

kctggaggat gtggctgcag agcctgctgc tcttgggcac	40
---	----

<210> 9

<211> 289

<212> DNA

<213> Homo sapiens

<400> 9

gccggggagc tgctctctca tgaaacaaga gctagaaact caggatgggc atcttggagg	60
---	----

gaccaagggg tgggccacag ccatggtggg agtggcctgg acctgccctg ggccacactg 120  
 accctgatac aggcattggca gaagaatggg aatatatttat actgacagaa atcagtaata 180  
 tttatatatt tatattttta aaatatattat ttattttatt atttaagttc atattccata 240  
 tttattcaag atgtttttacc gtaataatta ttattaaaaa tatgcttct 289

<210> 10  
 <211> 21  
 <212> RNA  
 <213> Artificial

<220>  
 <223> Description of Artificial Sequence: Motif

<400> 10  
 auuuuuuuuu uuauuuuuuu a 21

<210> 11  
 <211> 47  
 <212> DNA  
 <213> Homo sapiens

<400> 11  
 atcactctct ttaatcacta ctcacattaa cctcaactcc tgccaca 47

<210> 12  
 <211> 307  
 <212> DNA  
 <213> Homo sapiens

<400> 12  
 taattaagtg cttcccactt aaaacatatc aggccttcta tttatttatt taaatattta 60  
 aattttatat ttattgttga atgtatgggt gctacctatt gtaactatta ttcttaattc 120  
 taaaactata aatatggatc ttttatgatt ctttttgtaa gccctagggg ctctaaaatg 180  
 gtttacctta tttatcccaa aaatatattat tattatgttg aatgttaa atagtatcta 240  
 tgtagattgg ttagtaaaac tatttaataa atttgataaa tataaaaaaa aaaaacaaaa 300  
 aaaaaaa 307

<210> 13  
 <211> 15  
 <212> RNA  
 <213> Artificial

<220>  
 <223> Description of Artificial Sequence: Motif

<220>  
 <221> misc\_feature  
 <222> (1)..(15)

<223> n = a, t, g or c

<400> 13  
nauuuuuuuu uuuan

15

<210> 14  
<211> 62  
<212> DNA  
<213> Homo sapiens

<400> 14  
ttctgccctc gagccaccg ggaacgaaag agaagctcta tctcgctcc aggagcccag 60  
ct 62

<210> 15  
<211> 427  
<212> DNA  
<213> Homo sapiens

<400> 15  
tagcatgggc acctcagatt gttgttggtta atgggcattc cttcttctgg tcagaaacct 60  
gtccactggg cacagaactt atgttggttct ctatggagaa ctaaaagtat gagcgtagg 120  
acactatttt aattattttt aatttatttaa tatttaaata tgtgaagctg agttaattta 180  
tgtaagtcatt atttatattt ttaagaagta ccacttgaaa cattttatgt attagttttg 240  
aaataataat ggaaagtggc tatgcagttt gaatatcctt tgtttcagag ccagatcatt 300  
tcttggaag ttaggctta cctcaaataa atggctaact tatacatatt tttaaagaaa 360  
tatttatatt gtatttatat aatgtataaa tgggttttat accaataaat ggcattttta 420  
aaaattc 427

<210> 16  
<211> 15  
<212> RNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Motif

<220>  
<221> misc\_feature  
<222> (1)..(15)  
<223> n = a, t, g or c

<400> 16  
nauuuuuuuu uuuan

15

<210> 17  
<211> 701  
<212> DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 17

aagagctcca gagagaagtc gaggaagaga gagacggggt cagagagagc gcgcgggctg 60  
gcgagcagcg aaagcgacag gggcaaagtg agtgacctgc ttttgggggt gaccgccgga 120  
gcgcggcggtg agccctcccc cttgggatcc cgcagctgac cagtcgcgct gacggacaga 180  
cagacagaca ccgccccag cccagttac cacctcctcc ccggccggcg gcggacagtg 240  
gacgcggcgg cgagccgcgg gcaggggccc gagcccgcgc ccggaggcgg ggtggagggg 300  
gtcggagctc gcggcgctgc actgaaactt ttcgtccaac ttctgggctg ttctcgcttc 360  
ggaggagccg tgggtccgcgc gggggaagcc gagccgagcg gagccgcgag aagtgctagc 420  
tcggggccggg aggagccgca gccggaggag ggggaggagg aagaagagaa ggaagaggag 480  
agggggccgc agtggcgact cggcgctcgg aagccgggct catggacggg tgaggcggcg 540  
gtgtgcgcag acagtgtctc agcgcgcgcg ctccccagcc ctggcccggc ctcgggccgg 600  
gaggaagagt agctcgccga ggcgccgagg agagcgggcc gcccacagc ccgagccgga 660  
gagggacgcg agccgcgcgc ccggtcggg cctccgaaac c 701

&lt;210&gt; 18

&lt;211&gt; 1892

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 18

tgagccgggc aggaggaagg agcctccctc agggtttcgg gaaccagatc tctctccagg 60  
aaagactgat acagaacgat cgatacagaa accacgctgc cgccaccaca ccatcaccat 120  
cgacagaaca gtccttaatc cagaaacctg aaatgaagga agaggagact ctgcgcagag 180  
cactttgggt ccggagggcg agactccggc ggaagcattc ccgggcgggt gaccagcac 240  
ggtccctctt ggaattggat tcgccatttt attttcttg ctgctaaatc accgagcccg 300  
gaagattaga gagttttatt tctgggattc ctgtagacac acccaccac atacatacat 360  
ttatatatat atatattata tatatataaa aataaatatc tctattttat atatataaaa 420  
tatatatatt ctttttttaa attaacagtg ctaatgttat tgggtgtcttc actggatgta 480  
tttgactgct gtggacttga gttgggaggg gaatgttccc actcagatcc tgacagggaa 540  
gaggaggaga tgagagactc tggcatgata ttttttttgt ccacttggt ggggccaggg 600  
tcctctcccc tgccaagaa tgtgcaaggc cagggcattg gggcaaatat gaccagttt 660  
tgggaaacacc gacaaacca gccctggcgc tgagcctctc taccaggt cagacggaca 720  
gaaagacaaa tcacaggttc cgggatgagg acaccggctc tgaccaggag tttggggagc 780  
ttcaggacat tgctgtgctt tggggattcc ctccacatgc tgcacgcga tctcgcccc 840

```

aggggcactg cctggaagat tcaggagcct gggcggcctt cgcttactct cacctgcttc      900
tgagttgccc aggaggccac tggcagatgt cccggcgaag agaagagaca cattgttgga      960
agaagcagcc catgacagcg ccccttcctg ggactcgccc tcctcctctt cctgctcccc    1020
ttcctgggggt gcagcctaaa aggacctatg tcctcacacc attgaaacca ctagttctgt    1080
ccccccagga aacctgggtg tgtgtgtgtg agtggttgac cttcctccat cccctgggtcc    1140
ttcccttccc ttcccgaggg acagagagac agggcaggat ccacgtgccc attgtggagg    1200
cagagaaaag agaaagtgtt ttatatacgg tactttattta atatcccttt ttaattagaa    1260
attagaacag ttaatttaat taaagagtag ggtttttttt cagtattctt ggttaatat    1320
taatttcaac tatttatgag atgtatcttt tgctctctct tgctctctta tttgtaccgg    1380
tttttgtata taaaattcat gtttccaatc tctctctccc tgatcgggtga cagtcactag    1440
cttatcttga acagatattt aatttttgct acactcagct ctgccctccc cgatccccctg    1500
gctccccagc acacattcct ttgaaagagg gtttcaatat acatctacat actatatata    1560
tattgggcaa cttgtatttg tgtgtatata tatatatata tgtttatgta tatatgtgat    1620
cctgaaaaaa taaacatcgc tattctgttt tttatatggt caaaccaaac aagaaaaaat    1680
agagaattct acatactaaa tctctctcct tttttaattt taatatttgt tatcatttat    1740
ttattgggtgc tactgtttat ccgtaataat tgtggggaaa agatattaac atcacgtctt    1800
tgtctctagt gcagtttttc gagatattcc gtagtacata tttattttta aacaacgaca    1860
aagaaataca gatatatctt aaaaaaaaaa aa                                  1892

```

```

<210> 19
<211> 249
<212> RNA
<213> Homo sapiens

```

```

<400> 19
ccgggcucau ggacggguga ggcggcggug ugcgcagaca gugcuccagc gcgcgcgcuc      60
cccagcccug gcccgccuc gggccgggag gaagaguagc ucgccgaggc gccgaggaga    120
gcggggccgc ccacagcccg agccggagag ggacgcgagc cgcgcgcccc ggucgggccu    180
ccgaaaccuau gaacuuucug cugucuuggg ugcauuggag ccuugccuug cugcucuacc    240
uccaccaug                                           249

```

```

<210> 20
<211> 15
<212> RNA
<213> Artificial

```

```

<220>

```

## &lt;223&gt; Description of Artificial Sequence: Motif

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)..(15)

&lt;223&gt; n = a, t, g or c

&lt;400&gt; 20

nauuuuuuuu uuuan

15

&lt;210&gt; 21

&lt;211&gt; 49

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 21

ccgccagatt tgaatcgcg gacccgttgg cagaggtggc ggcggcggc

49

&lt;210&gt; 22

&lt;211&gt; 1141

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 22

ggcctctggc cggagctgcc tgggtcccaga gtggctgcac cacttccagg gtttattccc 60

tgggtgccacc agccttcctg tgggcccctt agcaatgtct taggaaagga gatcaacatt 120

ttcaaattag atgtttcaac tgtgctcctg ttttgtcttg aaagtggcac cagaggtgct 180

tctgcctgtg cagcgggtgc tgctggtaac agtggtgct tctctctctc tctctctttt 240

ttgggggctc atttttgctg ttttgattcc cgggcttacc aggtgagaag tgagggagga 300

agaaggcagt gtcccttttg ctagagctga cagctttggt cgcgtgggca gagccttcca 360

cagtgaatgt gtctggacct catgttggtg aggtgtgcac agtcctgagt gtggacttgg 420

caggtgcttg ttgaatctga gctgcagggt ccttatctgt cacacctgtg cctcctcaga 480

ggacagtttt tttgttggtg tgtttttttg tttttttttt ttggtagatg catgacttgt 540

gtgtgatgag agaatggaga cagagtccct ggctcctcta ctgtttaaca acatggcttt 600

cttattttgt ttgaattggt aattcacaga atagcacaaa ctacaattaa aactaagcac 660

aaagccattc taagtcattg gggaaacggg gtgaacttca ggtggatgag gagacagaat 720

agagtgatag gaagcgtctg gcagatactc cttttgccac tgctgtgtga ttagacagggc 780

ccagtgagcc gcggggcaca tgctggccgc tcctccctca gaaaaaggca gtggcctaaa 840

tcctttttta atgacttggc tcgatgctgt gggggactgg ctgggctgct gcaggccgtg 900

tgtctgtcag cccaaccttc acatctgtca cgttctccac acggggggaga gacgcagtcc 960

gccaggtcc ccgctttctt tggaggcagc agctcccgc gggctgaagt ctggcgtaag 1020

atgatggatt tgattcgccc tcctccctgt catagagctg caggggtggat tgttacagct 1080  
 tcgctggaaa cctctggagg tcattctcggc tgttctgag aaataaaaag cctgtcattt 1140  
 c 1141

<210> 23  
 <211> 247  
 <212> DNA  
 <213> Homo sapiens

<400> 23  
 ccccggcgca gcgcggccgc agcagcctcc gcccccgca cgggtgtgagc gcccgacgcg 60  
 gccgaggcgg ccggagtcct gagctagccc cggcggccgc cggcgcccag accggacgac 120  
 aggccacctc gtcggcgctc gcccgagtcc ccgcctcgcc gccaacgcca caaccaccgc 180  
 gcacggcccc ctgactccgt ccagtattga tcgggagagc cggagcgagc tcttcgggga 240  
 gcagcag 247

<210> 24  
 <211> 1716  
 <212> DNA  
 <213> Homo sapiens

<400> 24  
 tgaccacgga ggatagtatg agccctaaaa atccagactc tttcgatacc caggaccaag 60  
 ccacagcagg tcctccatcc caacagccat gcccgcatta gctcttagac ccacagactg 120  
 gttttgcaac gtttacaccg actagccagg aagtacttcc acctcgggca ctttttggga 180  
 agttgcattc ctttgtcttc aaactgtgaa gcatttacag aaacgcatcc agcaagaata 240  
 ttgtcccttt gagcagaaat ttatctttca aagaggata tttgaaaaaa aaaaaaaaag 300  
 tatatgtgag gatttttatt gattggggat cttggagttt ttcattgtcg ctattgattt 360  
 ttacttcaat gggctcttcc aacaaggaag aagcttgcgt gtagcacttg ctaccctgag 420  
 ttcatccagg cccaactgtg agcaaggagc acaagccaca agtcttccag aggatgcttg 480  
 attccagtgg ttctgcttca aggcttccac tgcaaaacac taaagatcca agaaggcctt 540  
 catggcccca gcaggccgga tcggtactgt atcaagtcag ggcaggtaga gtaggataag 600  
 ccactctgtc ccttctctggg caaagaagaa acggagggga tgaattcttc cttagactta 660  
 cttttgtaaa aatgtcccca cggacttac tccccactga tggaccagtg gtttccagtc 720  
 atgagcggtta gactgacttg tttgtcttcc attccattgt tttgaaactc agtatgccgc 780  
 ccctgtcttg ctgtcatgaa atcagcaaga gaggatgaca catcaaataa taactcggat 840  
 tccagcccac attggattca tcagcatttg gaccaatagc ccacagctga gaatgtggaa 900  
 tacctaagga taacaccgct tttgttctcg caaaaacgta tctcctaatt tgaggctcag 960

```

atgaaatgca tcaggtcctt tggggcatag atcagaagac tacaaaaatg aagctgctct 1020
gaaatctcct ttagccatca cccaacccc ccaaaattag tttgtgttac ttatggaaga 1080
tagttttctc cttttacttc acttcaaaag ctttttactc aaagagtata tgttccctcc 1140
aggtcagctg cccccaaacc ccctccttac gctttgtcac acaaaaagtg tctctgcctt 1200
gagtcaccta ttcaagcact tacagctctg gccacaacag ggcattttac aggtgcgaat 1260
gacagtagca ttatgagtag tgtgaattca ggtagtaa atgaaactag ggtttgaaat 1320
tgataatgct ttcacaacat ttgcagatgt tttagaagga aaaaagttcc ttcctaaaat 1380
aatttctcta caattggaag attggaagat tcagctagtt aggagcccat ttttccctaa 1440
tctgtgtgtg ccctgtaacc tgactgggta acagcagtc tttgtaaaca gtgtttttaa 1500
ctctcctagt caatatccac cccatccaat ttatcaagga agaaatgggt cagaaaatat 1560
tttcagccta cagttatgtt cagtcacaca cacatacaaa atgttccttt tgctttttaa 1620
gtaatTTTTT actcccagat cagtcagagc ccctacagca ttgttaagaa agtatttgat 1680
ttttgtctca atgaaaataa aactatattc atttcc 1716

```

```

<210> 25
<211> 160
<212> DNA
<213> Homo sapiens

```

```

<400> 25
tataaaagct gggccggcgc gggccgggcc attcgcgacc cggagggtgcg cgggcgcggg 60
cgagcagggg ctccgggtgg gcggcgcgac gcccgcgca ggctggaggc cgccgaggct 120
cgccatgccg ggagaactct aactccccca tggagtcggc 160

```

```

<210> 26
<211> 1306
<212> DNA
<213> Homo sapiens

```

```

<400> 26
tgaggcgcgc ggctgtggga ccgccctggg ccagcctccg gcggggaccc agggagtggg 60
ttggggctgc cggtctctga ggcttgccca gaccgtgcga gccaggacta ggagattccg 120
gtgcctcctg aaagcctggc ctgctccgcg tgtccctcc cttcctctgc gccggacttg 180
gtgctgctaa gatgaggggg ccaggcgggt gcttctccct gcgaggaggg gagaattctt 240
ggggctgagc tgggagccc gcaactctag tatttaggat aacttgtgcc ttggaaatgc 300
aaactcaccg ctccaatgcc tactgagtag ggggagcaaa tcgtgccttg tcattttatt 360
tggaggtttc ctgcctcctt cccgaggcta cagcagaccc ccatgagaga aggagggggg 420

```

caggccccgtg gaggaggggg gctcagggag ctgagatccc gacaagccccg ccagccccag 480  
 ccgctcctcc acgcctgtcc ttagaaaggg gtggaaacat agggacttgg ggcttggaac 540  
 ctaaggttgt tccctagttc tacatgaagg tggaggtctc tagttccacg cctctccac 600  
 ctccctccgc acacacccca cccagcctgc tataggctgg ctttcccttg gggctggaac 660  
 tcaactgcgat ggggtcacca ggtgaccagt ggagcccca ccccgagtca gaccagaaag 720  
 ctaggtcgtg ggtcagctct gaggatgtat acccctgggtg ggagagggag acctagagat 780  
 ctggctgtgg ggcgggcatg ggggggtgaag ggccactggg accctcagcc ttgtttgtac 840  
 tgtatgcctt cagcattgcc taggaacacg aagcacgata agtccatcca gagggaccgg 900  
 agttatgaca agcttcccaa atattttgct ttatcagccg atatcaacac ttgtatctgg 960  
 cctctgtgcc cagcagtgcc ttgtgcaatg tgaatgtacc gtctctgcta aaccaccatt 1020  
 ttattttggtt ttgttttgtt tggttttctc ggatacttgc caaaatgaga ctctccgtcg 1080  
 gcagctgggg gaagggctctg agactctctt tccttttgggt tttgggatta cttttgatcc 1140  
 tgggggacca atgaggtgag gggggttctc ctttgccctc agctttccca gccctccggc 1200  
 ctgggctgcc cacaaggctt ctccccaga ggccctggct cctggtcggg aaggaggtg 1260  
 cctcccgcca acgcatcact ggggctggga gcagggaagg gaattc 1306

<210> 27  
 <211> 216  
 <212> DNA  
 <213> Homo sapiens

<400> 27  
 agcgagagcg cccccgagca gcgcccgcgc cctccgcgcc ttctccgccg ggacctcgag 60  
 cgaaagacgc ccgcccgcgc cccagccctc gcctccctgc ccaccgggca caccgcgccg 120  
 ccaccccgac cccgctgcgc acggcctgtc cgtgcacac cagcttggtg gcgtcttcgt 180  
 cgccgcgctc gcccgggct actcctgcgc gccaca 216

<210> 28  
 <211> 687  
 <212> DNA  
 <213> Homo sapiens

<400> 28  
 taaatgctac ctgggtttcc agggcacacc tagacaaaca rgggagaaga gtgtcagaat 60  
 cagaatcatg gagaaaatgg gcgggggtgg tgtgggtgat gggactcatt gtagaaagga 120  
 agccttgctc attcttgagg agcattaagg tatttcgaaa ctgccagggtg tgctgggtgcg 180  
 gatggacact aatgcagcca cgattggaga atactttgct tcatagtatt ggagcacatg 240  
 ttactgcttc attttgagc ttgtggagtt gatgactttc tgttttctgt ttgtaaatta 300

tttgctaagc atattttctc taggcttttt tccttttggg gttctacagt cgtaaaagag 360  
 ataataagat tagttggaca gtttaaagct tttattcgtc ctttgacaaa agtaaagggg 420  
 agggcattcc atcccttcct gaagggggac actccatgag tgtctgtgag aggcagctat 480  
 ctgcactcta aactgcaaac agaaatcagg tgttttaaga ctgaatgttt tatttatcaa 540  
 aatgtagctt ttggggaggg aggggaaatg taatactgga ataatttgta aatgatttta 600  
 attttatatt cagtgaaaag attttattta tggaattaac catttaataa agaaatattt 660  
 acctaaaaaa aaaaaaaaaa aaaaaaa 687

<210> 29  
 <211> 310  
 <212> DNA  
 <213> Homo sapiens

<400> 29  
 cggccccaga aaacccgagc gagtaggggg cggcgcgcag gagggaggag aactgggggc 60  
 gcgggaggct ggtgggtgtc ggggggtggag atgtagaaga tgtgacgccg cggcccggcg 120  
 ggtgccagat tagcggacgg ctgcccgcgg ttgcaacggg atcccgggcg ctgcagcttg 180  
 ggaggcggct ctccccaggc ggcgtccgcg gagacacca tccgtgaacc ccagggtccc 240  
 ggccgcggcg tcgccgcgca ccagggggcg gcggacagaa gagcggccga gcggctcgag 300  
 gctggggggac 310

<210> 30  
 <211> 5882  
 <212> DNA  
 <213> Homo sapiens

<400> 30  
 ctgctaagag ctgattttta tggccacatc taatctcatt tcacatgaaa gaagaagtat 60  
 attttagaaa ttgtttaatg agagtaaaag aaaataaatg tgtatagctc agtttgata 120  
 attggtcaaa caatttttta tccagtagta aaatatgtaa ccattgtccc agtaaagaaa 180  
 aataacaaaa gttgtaaaat gtatattctc ctttttatat tgcattctgct gttaccagc 240  
 gaagcttacc tagagcaatg atctttttca cgcatttgct ttattcgaaa agaggctttt 300  
 aaaatgtgca tgtttagaaa caaaatttct tcatggaaat catatacatt agaaaatcac 360  
 agtcagatgt ttaatcaatc caaaatgtcc actatttctt atgtcattcg ttagtctaca 420  
 tgtttctaaa catataaatg tgaatttaac caattccttt catagtttta taattctctg 480  
 gcagttcctt atgatagagt ttataaaaca gtcctgtgta aactgctgga agttcttcca 540

cagtcagggtc aattttgtca aacccttctc tgtacccata cagcagcagc ctagcaactc	600
tgctgggtgat gggagttgta ttttcagtct tggccagggtc attgagatcc atccactcac	660
atcttaagca ttcttcctgg caaaaattta tggatgaatga atatggcttt aggcggcaga	720
tgatatacat atctgacttc ccaaagctc caggatttgt gtgctgttgc cgaataactca	780
ggacggacct gaattctgat tttataccag tctcttcaaa aacttctcga accgctgtgt	840
ctcctacgta aaaaaagaga tgtacaaatc aataataatt acacttttag aaactgtatc	900
atcaaagatt ttcagttaaa gtagcattat gtaaaggctc aaaacattac cctaacaaag	960
taaagttttc aatacaaatt ctttgccttg tggatatcaa gaaatcccaa aatattttct	1020
taccactgta aattcaagaa gcttttgaaa tgctgaatat ttctttggct gctacttgga	1080
ggcttatcta cctgtacatt tttgggggtca gctcttttta acttcttgct gctctttttc	1140
ccaaaaggta aaaatataga ttgaaaagt aaaacatttt gcatggctgc agttcctttg	1200
tttcttgaga taagattcca aagaacttag attcatttct tcaacaccga aatgctggag	1260
gtgtttgatc agttttcaag aaacttgga tataaataat ttataattc aacaaagggt	1320
ttcacatttt ataagggtga tttttcaatt aaatgcaaat ttgtgtggca ggatttttat	1380
tgccattaac atatttttgt ggctgctttt tctacacatc cagatgggtcc ctctaactgg	1440
gctttctcta attttgtgat gttctgtcat tgtctcccaa agtatttagg agaagccctt	1500
taaaaagctg ccttcctcta ccactttgct ggaaagcttc acaattgtca cagacaaaga	1560
tttttgttcc aatactcgtt ttgcctctat ttttcttggt tgtcaaatag taaatgatat	1620
ttgcccttgc agtaattcta ctgggtgaaaa acatgcaaag aagaggaagt cacagaaaca	1680
tgtctcaatt cccatgtgct gtgactgtag actgtcttac catagactgt cttacccatc	1740
ccctggatat gctcttggtt tttccctcta atagctatgg aaagatgcat agaaagagta	1800
taatgtttta aaacataagg cattcatctg ccatttttca attacatgct gacttccctt	1860
acaattgaga tttgcccata ggtaaacaat ggtagaaac aactgaaagc ataaaagaaa	1920
aatctaggcc ggggtgcagt gctcatgctt atattccctg cactttggga ggccaaagca	1980
ggaggatcgc ttgagcccag gagttcaaga ccaacctggt gaaacccctg ctctacaaaa	2040
aaacacaaaa aatagccagg catgggtggcg tgtacatgtg gtctcagata cttgggaggc	2100
tgagggtggga gggttgatca cttgaggctg agagggtcaag gttgcagtga gccataatcg	2160
tgccactgca gtccagccta ggcaacagag tgagactttg tctcaaaaaa agagaaattt	2220
tccttaataa gaaaagtaat ttttactctg atgtgcaata catttggttat taaatttatt	2280
atttaagatg gtagcactag tcttaaattg tataaaatat cccctaacat gtttaaattg	2340
ccatttttat tcattatgct ttgaaaaata attatgggga aatacatggt tgttattaaa	2400

tttattatta aagatagtag cactagtctt aaatttgata taacatctcc taacttgttt	2460
aaatgtccat ttttattctt tatgcttgaa aataaattat ggggatccta tttagctctt	2520
agtaccacta atcaaaagtt cggcatgtag ctcatgatct atgctgtttc tatgtcgtgg	2580
aagcaccgga tgggggtagt gagcaaactt gccctgctca gcagtcacca tagcagctga	2640
ctgaaaatca gcaactgctg agtagttttg atcagtttaa cttgaatcac taactgactg	2700
aaaattgaat gggcaaataa gtgcttttgt ctccagagta tgcgggagac ccttccacct	2760
caagatggat atttcttccc caaggatttc aagatgaatt gaaattttta atcaagatag	2820
tgtgctttat tctgttgtat tttttattat tttaataac tgtaagccaa actgaaataa	2880
catttgctgt tttatagggt tgaagaacat aggaaaaact aagaggtttt gtttttattt	2940
ttgctgatga agagatatgt ttaaataatgt tgtattgttt tgtttagtta caggacaata	3000
atgaaatgga gtttatattt gttatttcta ttttgttata tttaataata gaattagatt	3060
gaaataaaat ataatgggaa ataatctgca gaatgtgggt ttcttggtgt ttctctgac	3120
tctagtgcac tgatgatctc tgataaggct cagctgcttt atagtctctc ggctaatagca	3180
gcagatactc ttctgcccag tggtaatacg atttttttaag aaggcagttt gtcaatttta	3240
atcttggtga tacctttata ctcttaggggt attattttat acaaaagcct tgaggattgc	3300
attctatttt ctatatgacc ctcttgatat ttaaaaaaca ctatggataa caattcttca	3360
tttacctagt attatgaaag aatgaaggag ttcaaacaaa tgtgtttccc agttaactag	3420
ggtttactgt ttgagccaat ataaatgttt aactgtttgt gatggcagta ttctaaagt	3480
acattgcatg ttttcctaaa tacagagttt aaataatttc agtaattctt agatgattca	3540
gcttcatcat taagaatatc ttttgtttta tgttgagtta gaaatgcctt catatagaca	3600
tagtctttca gaccttact gtcagttttc atttctagct gctttcaggg ttttatgaat	3660
tttcaggcaa agctttaatt tatactaagc ttaggaagta tggctaatagc caacggcagt	3720
ttttttcttc ttaattccac atgactgagg catatatgat ctctgggtag gtgagttgtt	3780
gtgacaacca caagcacttt tttttttttt aaagaaaaaa aggtagtga tttttaatca	3840
tctggacttt aagaaggatt ctggagtata cttaggcctg aaattatata tatttggtct	3900
ggaaatgtgt ttttcttcaa ttacatctac aagtaagtac agctgaaatt cagaggaccc	3960
ataagagttc acatgaaaaa aatcaattca tttgaaaagg caagatgcag gagagaggaa	4020
gccttgcaaa cctgcagact gctttttgcc caatatagat tgggtaaggc tgcaaaacat	4080
aagcttaatt agctcacatg ctctgctctc acgtggcacc agtggatagt gtgagagaat	4140
taggctgtag aacaaatggc cttctctttc agcattcaca ccaactacaaa atcatctttt	4200

```

atatcaacag aagaataagc ataaactaag caaaagggtca ataagtacct gaaaccaaga 4260
ttggctagag atatatctta atgcaatcca ttttctgatg gattggttacg agttggctat 4320
ataatgtatg tatgggtatgt tgatttgtgt aaaagtttta aaaatcaagc tttaagtaca 4380
tggacatttt taaataaaat atttaaagac aatttagaaa attgccttaa tatcattggt 4440
ggctaaatag aatagggggac atgcatatta aggaaaagggt catggagaaa taatattggt 4500
atcaaacaaa tacattgatt tgtcatgata cacattgaat ttgatccaat agtttaagga 4560
ataggtagga aaatttggtt tctatttttc gatttcctgt aaatcagtga cataaataat 4620
tcttagctta ttttatatct ccttgtctta aatactgagc tcagtaagtt gtgttagggg 4680
attatttctc agttgagact ttcttatatg acattttact atgttttgac ttcttgacta 4740
ttaaaaataa atagtagaaa caattttcat aaagtgaaga attatataat cactgcttta 4800
taactgactt tatttatatt atttcaaagt tcatttaaag gctactatc atcctctgtg 4860
atggaatggg caggaatttg ttttctcata gtttaattcc aacaacaata ttagtcgtat 4920
ccaaaataac cttaatgct aaactttact gatgtatatc caaagcttct ctttttcaga 4980
cagattaatc cagaagcagt cataaacaga agaatagggtg gtatgttcct aatgatatta 5040
tttctactaa tggaataaac tgtaatatta gaaattatgc tgctaattat atcagctctg 5100
aggtaatttc tgaaatgttc agactcagtc ggaacaaatt ggaaaattta aatttttatt 5160
cttagctata aagcaagaaa gtaaacacat taatttcctc aacattttta agccaattaa 5220
aaatataaaa gatacacacc aatatcttct tcaggctctg acaggcctcc tggaaacttc 5280
cacatatatt tcaactgcag tataaagtca gaaaataaag ttaacataac tttcactaac 5340
acacacatat gtagatttca caaaatccac ctataattgg tcaaagtggg tgagaatata 5400
tttttttagta attgcatgca aaatttttct agcttccatc ctttctccct cgtttcttct 5460
ttttttgggg gagctggtaa ctgatgaaat cttttccac cttttctctt caggaaatat 5520
aagtggtttt gtttgggttaa cgtgatacat tctgtatgaa tgaaacattg gagggaaaca 5580
tctactgaat ttctgtaatt taaaatattt tgctgctagt taactatgaa cagatagaag 5640
aatcttacag atgctgctat aaataagtag aaaatataaa tttcatcact aaaatagct 5700
attttaaaat ctatttccta tattgtattt ctaatcagat gtattactct tattatttct 5760
attgtatgtg ttaatgattt tatgtaaaaa tgtaattgct tttcatgagt agtatgaata 5820
aaattgatta gtttgtgttt tcttgtctcc cgaaaaaaaa aaaaaaaaaa aaaaaaaaaa 5880
aa

```

<210> 31  
<211> 310

<212> DNA  
 <213> Homo sapiens

<400> 31  
 cggccccaga aaacccgagc gagtaggggg cggcgcgcag gagggaggag aactgggggc 60  
 gcgggaggct ggtgggtgtc ggggggtggag atgtagaaga tgtgacgccg cggcccggcg 120  
 ggtgccagat tagcggacgg ctgcccgcgg ttgcaacggg atcccgggcg ctgcagcttg 180  
 ggaggcggct ctccccaggc ggcgtccgcg gagacacca tccgtgaacc ccaggtcccc 240  
 ggccgcccgc tcgccgcgca ccagggggccg gcggacagaa gagcggccga gcggctcgag 300  
 gctgggggac 310

<210> 32  
 <211> 3212  
 <212> DNA  
 <213> Homo sapiens

<400> 32  
 tgagggcgcc aggcaggcgg gcgccaccgc caccgcgagc gagggcggag ccggccccag 60  
 gtgtccccct gacagtccct cctctccgga gcattttgat accagaaggg aaagcttcat 120  
 tctccttggt gttggttggt ttttcctttg ctctttcccc ctccatctc tgacttaagc 180  
 aaaagaaaaa gattacccaa aaactgtctt taaaagagag agagagaaaa aaaaaatagt 240  
 atttgcataa ccctgagcgg tgggggagga gggttgtgct acagatgata gaggatttta 300  
 taccccaata atcaactcgt ttttatatta atgtacttgt ttctctgttg taagaatagg 360  
 cattaacaca aaggaggcgt ctcgggagag gattaggttc catcctttac gtgtttaaaa 420  
 aaaagcataa aaacatttta aaaacataga aaaattcagc aaaccatttt taaagtagaa 480  
 gagggtttta ggtagaaaaa catattcttg tgcttttcct gataaagcac agctgtagtg 540  
 gggttctagg catctctgta ctttgcttgc tcatatgcat gtagtcactt tataagtcac 600  
 tgtatgttat tatattccgt aggtagatgt gtaacctctt caccttattc atggctgaag 660  
 tcacctcttg gttacagtag cgtagcgtgg ccgtgtgcat gtcctttgcg cctgtgacca 720  
 ccacccaac aaaccatcca gtgacaaacc atccagtga gggttgctcg gcaccagcca 780  
 gcgtagcagg gtcgggaaag gccacctgtc ccactcctac gatacgctac tataaagaga 840  
 agacgaaata gtgacataat atattctatt tttatactct tcctatTTTT gtagtgacct 900  
 gtttatgaga tgctggTTTT ctacccaacg gccctgcagc cagctcacgt ccaggttcaa 960  
 cccacagcta cttgggtttgt gttcttcttc atattctaaa accattccat ttccaagcac 1020  
 tttcagtcca ataggtgtag gaaatagcgc tggtttttgt gtgtgtgcag ggagggcagt 1080  
 tttctaattg aatgggtttg gaatatccat gtacttggtt gcaagcagga ctttgaggca 1140

agtgtgggcc actgtggtgg cagtggaggt ggggtgtttg ggaggctgcg tgccagtcaa	1200
gaagaaaaag gtttgcattc tcacattgcc aggatgataa gttcctttcc ttttctttaa	1260
agaagttgaa gtttaggaat cctttggtgc caactggtgt ttgaaagtag ggacctcaga	1320
ggtttaccta gagaacaggt ggtttttaag ggttatctta gatgtttcac accggaaggt	1380
ttttaaacac taaaatatat aatttatagt taaggctaaa aagtatatatt attgcagagg	1440
atgttcataa ggccagtatg atttataaat gcaatctccc cttgatttaa acacacagat	1500
acacacacac acacacacac acacacaaac cttctgcctt tgatgttaca gatttaatac	1560
agtttatattt taaagataga tccttttata ggtgagaaaa aaacaatctg gaagaaaaaa	1620
accacacaaa gacattgatt cagcctgttt ggcgtttccc agagtcattc gattggacag	1680
gcatgggtgc aaggaaaatt agggactca acctaagttc ggttccgatg aattcttattc	1740
ccctgcccct tcctttaaaa aacttagtga caaaatagac aatttgcaca tcttggctat	1800
gtaattcttg taatttttat ttaggaagtg ttgaaggag gtggcaagag tgtggaggct	1860
gacgtgtgag ggaggacagg cgggaggagg tgtgaggagg aggcctccga ggggaagggg	1920
cggtgccac accggggaca ggccgcagct ccattttctt attgcgctgc taccgttgac	1980
ttccaggcac ggtttggaat tattcacatc gcttctgtgt atctctttca cattgtttgc	2040
tgctattgga ggatcagttt tttgttttac aatgtcatat actgccatgt actagtttta	2100
gttttctctt agaacattgt attacagatg ctttttttgt agtttttttt ttttttatgt	2160
gatcaatttt gacttaattg gattactgct ctattccaaa aaggttgctg tttcacaata	2220
cctcatgctt cacttagcca tgggtggacc agcgggcagg ttctgcctgc tttggcgggc	2280
agacacgcgg gcgcgatccc acacaggctg gcgggggccc gccccgaggc cgcgtgctg	2340
agaaccgcgc cgggtgcccc agagaccagg ctgtgtccct cttctcttcc ctgcgcctgt	2400
gatgctgggc acttcatctg atcgggggcg tagcatcata gtagttttta cagctgtgtt	2460
attctttgcg ttagctatg gaagttgcat aattattatt attattatta taacaagtgt	2520
gtcttacgtg ccaccacggc gttgtacctg taggactctc attcgggatg attggaatag	2580
cttctggaat ttgttcaagt tttgggtatg tttaatctgt tatgtactag tgttctgttt	2640
gttattgttt tgtaattac accataatgc taatttaaag agactccaaa tctcaatgaa	2700
gccagctcac agtgctgtgt gccccggtca cctagcaagc tgccgaacca aaagaatttg	2760
caccccgctg cgggcccacg tggttggggc cctgccttgg cagggtcatc ctgtgctcgg	2820
aggccatctc gggcacaggc ccaccccgcc ccacccctcc agaacacggc tcacgcttac	2880
ctcaaccatc ctggctgcgg cgtctgtctg aaccacgcgg gggccttgag ggacgctttg	2940

```

tctgtcgtga tggggcaagg gcacaagtcc tggatgttgt gtgtatcgag aggccaaagg 3000
ctggtggcaa gtgcacgggg cacagcggag tctgtcctgt gacgcgcaag tctgagggtc 3060
tgggcggcgg gcggtctgggt ctgtgcattt ctggttgac cgcggcgctt ccagcacca 3120
acatgtaacc ggcattgttc cagcagaaga caaaaagaca aacatgaaag tctagaaata 3180
aaactggtaa aacccccaaa aaaaaaaaaa aa 3212

```

```

<210> 33
<211> 1043
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (409)..(444)
<223> n = a, t, g or c

```

```

<400> 33
gcaccgcggc gagcttggct gcttctgggg cctgtgtggc cctgtgtgtc ggaaagatgg 60
agcaagaagc cgagcccag gggcgccgc gacccctctg accgagatcc tgctgctttc 120
gcagccagga gcaccgtccc tccccgatt agtgcgtacg agcgcccagt gccctggccc 180
ggagagtgga atgatccccg agggccagg cgtcgtgctt ccgcgcgccc cgtgaaggaa 240
actggggagt cttgagggac ccccgactcc aagcgcgaaa accccggatg gtgaggagca 300
ggactaggcc cggcagcgag cggtcacttt tgggtctggg ctctgacggt gtcccctcta 360
tcgctgggtc ccagcctctg cccgttcgca gcctttgtgc ggttcgtgnc tgggggctcg 420
gggcgcgggg cgcggggcat gggncacgtg gctttgcgga ggttttggtg gactggggct 480
agacagtccc cgccaggagg gagggcgagg tttcggacgg ctctcgcggc ggtgggggtg 540
ggggtgggtc ggaggtctcc gcgggagttc agggtaaagg tcacggggcc ggggctgcgg 600
gccgcttcgg cgcgggagg cgggatgatc gcagtgcctg tcgggtcact agtgtgaacg 660
ctgcgcgtag tctgggcggg attgggcccg ttcagtgggc aggttgactc agcttttctt 720
cttgagctgg tcaagtccag acacgttccg aaactgcagt aaaaggagtt aagtcctgac 780
ttgtctccag ctggggctat ttaaaccatg cttttccca gctgtgttca gtggcgattg 840
gagggtagac ctgtgggcac ggacgcacgc cactttttct ctgctgatcc aggtaagcac 900
cgacttgctt gtagctttag ttttaactgt tgtttatgtt ctttatatat gatgtatttt 960
ccacagatgt ttcattgatt ccagttttca tcgtgtcttt tttttccttg taggcaaatg 1020
tgcaatacca acatgtctgt acc 1043

```

<210> 34  
 <211> 1153  
 <212> DNA  
 <213> Homo sapiens

<400> 34  
 tagttgacct gtctataaga gaattatata tttctaacta tataacccta ggaattttaga 60  
 caacctgaaa tttattcaca tatatcaaag tgagaaaatg cctcaattca catagatttc 120  
 ttctctttag tataattgac ctactttggg agtggaatag tgaatactta ctataatttg 180  
 acttgaatat gtagctcatc ctttacacca actcctaatt ttaaataatt tctactctgt 240  
 cttaaattgag aagtacttgg tttttttttt cttaaatatg tatatgacat ttaaattgtaa 300  
 cttattatatt tttttgagac cgagtcttgc tctgttaccg aggctggagt gcagtgggtg 360  
 atcttggtc actgcaagct ctgccctccc cgggttcgca ccattctcct gcctcagcct 420  
 cccaattagc ttggcctaca gtcactctgcc accacacctg gctaattttt tgtactttta 480  
 gtagagacag ggtttcaccg tgtagccag gatggtctcg atctcctgac ctctgtgatcc 540  
 gccacacctg gcctcccaaa gtgctgggat tacaggcatg agccaccgtg ctctccagcc 600  
 taggcaacag agtgagactc tgtctccaaa aaaaaaaaaa aaaaaagggg actataacac 660  
 cccaggggaa agggacaggt gggacattct tattcttaat ttaaataaat tgacagggga 720  
 aagttgggccc actcttgagc ttgtgggtgc tcaccagggt gacccccaaa aaagaagcct 780  
 tccacaaaac attaatattat ttccctaata taccgcctc tgtgagttaa gggataatgc 840  
 atcaggactc ttgcaaccag acaaaattat ttaaaaacgc cacttggggg ggaggcgggt 900  
 cctcctggg gattcgcctt tgtgggagag aaaactgcac agacttgggc aaataatggt 960  
 ttttgtcacc caaaaacgta ttgcgcgagac atttcattag aacgaagctt taccctaata 1020  
 ttgaactccc catttaaaaca gtttccacac acacttaggg agatttttcc ctctgtgagt 1080  
 tccgcagaac aatagttgga cgggaataga accctgaaac actttagttc accacgaact 1140  
 attatagggc ggg 1153

<210> 35  
 <211> 334  
 <212> DNA  
 <213> Homo sapiens

<400> 35  
 tgactatcca gctctgagag acgggagttt ggagttgccc gctttacttt gggtgggttg 60  
 gggggggcgg cgggctgttt tgttcctttt cttttttaag agttgggttt tcttttttaa 120  
 ttatccaaac agtgggcagc ttctccccc acaccaagt atttgacaa tatttgtgcg 180  
 ggggtatggg gtgggttttt aaatctcggt tctcttggac aagcacaggg atctcgttct 240

cctcattttt tgggggtgtg tggggacttc tcaggtcgtg tccccagcct tctctgcagt 300  
 cccttctgcc ctgccgggcc cgtcgggagg cgcc 334

<210> 36  
 <211> 543  
 <212> DNA  
 <213> Homo sapiens

<400> 36  
 tagctcagga ccttgggtgg gcctggctcg catgtaggtc aggaccttgg ctggacctgg 60  
 aggccctgcc cagccctgct ctgcccagcc cagcaggggc tccaggcctt ggctggcccc 120  
 acatcgcctt ttctctcccg acacctccgt gcacttgtgt ccgaggagcg aggagcccct 180  
 cgggcccttg gtggcctctg ggccctttct cctgtctccg ccactccctc tggcggcgct 240  
 ggccgtggct ctgtctctct gaggtgggtc gggcgccctc tgcccgcccc ctcccacacc 300  
 agccaggctg gtctctctta gcctgtttgt tgtgggggtg gggtatatatt tgtaaccact 360  
 gggcccccag cccctctttt ggcacccctt gtctgacct gttctcggca ccttaaatta 420  
 ttagaccccg gggcagtcag gtgctccgga caccgaagg caataaaaca ggagccgtga 480  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 540  
 aaa 543

<210> 37  
 <211> 511  
 <212> DNA  
 <213> Homo sapiens

<400> 37  
 gctcagcaag gggtcctgcc ttctctgtca ctgtctcttt tgctgtttgt aattctgtct 60  
 gcctctcttg gactctgcct gtctcactct ttctgtctgt gcctctcctc actcttgctc 120  
 tttctgcctg aatcacagcc ctgagttttt ctgtctctcat gcatttgtct ttgtggctct 180  
 ttccgtcttt ctgcccttga caccatcccc tctcccagtg cttcccctct gcttccagat 240  
 cgcttcatga cttaggcagg gaaacagagg tcagggcctc cttccaggct tccctctgca 300  
 tcttactgag tatgcaggtc ggaagagcct cgggtcctgc ctccgcgggt ggcctagagc 360  
 caaaggaagg cggagcccgt cggggcgagg ttggccctta gggccacctc ataaagcctg 420  
 gggcgagggg cacaacggcc ttgggaagga gcctgctgg ggccgtccag tccccagac 480  
 ctcacaggct cagtcgcgga tctgcagtgt c 511

<210> 38  
 <211> 458  
 <212> DNA  
 <213> Homo sapiens

<400> 38  
tagtagggac cagtgaccat cacatccctt caagagtctt gaagatcaag ccagttctcc 60  
ttccctgcag agctttggcc attaccacct gacctcttgc tgccagctaa taagaagtgc 120  
caagtggaca gtctggccac tgtcaaggca gggaaggggc catgactttt ctgccctgcc 180  
ctcagcctgt tgccctgcct cccaaacccc attagtctag ccttgtagct gttactgcaa 240  
gtgtttcttc tggcttagtc tgttttctaa agccaggact attccctttc ctccccagga 300  
atatgtgttt tcctttgtct taatcgatct ggtaggggag aaatggcgaa tgtcatacac 360  
atgagatggg atatccttgc gatgtacaga atcagaaggt ggtttgacag catcataaac 420  
aggctgactg gcaggaatga aaaaaaaaaa aaaaaaaaaa 458

<210> 39  
<211> 270  
<212> DNA  
<213> Homo sapiens

<400> 39  
ggggccgccc agagccgcag cgccgctcgc ccgcccggcc ccaccccgcc gcccgcgccc 60  
gcgaattgcg ccccgcgccc tcccctcgcg ccccgagac aaagaggaga gaaagtgtgc 120  
gcggccgagc gggcaggtga ggaggggtgag ccgcgcggag gggcccgcc ctggcccgcc 180  
tcagcccccg cccgcgcccc cagcccgccg ccgcgagcag cgcccgacc cccagcgcc 240  
ggccccgccc gccagcccc ccggcccgcc 270

<210> 40  
<211> 751  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (535)..(739)  
<223> n = a, t, g or c

<400> 40  
taagcaggcc tccaacgccc ctgtggccaa ctgcaaaaaa agcctccaag ggtttcgact 60  
ggtcagctc tgacatccct tcctggaaac agcatgaata aaacactcat cccatgggtc 120  
caaattaata tgattctgct ccccccttct ccttttagac atggttgtgg gtctggaggg 180  
agacgtgggt ccaaggtcct catcccatcc tccctctgcc aggcaactatg tgtctggggc 240  
ttcgatcctt gggcgcaggc agggctggga cacgcggctt ccctcccagt ccctgccttg 300  
gcaccgtcac agatgccaaag caggcagcac ttagggatct cccagctggg ttagggcagg 360  
gcctggaaat gtgcattttg cagaaacttt tgagggtcgt tgcaagactg tgtagcaggc 420

ctaccagggtc cctttcatct tgagagggac atggcccctt gttttctgca gcttccacgc 480  
 ctctgcactc cctgcccctg gcaagtgtc ccatcgcccc cggtgccac catgnagctc 540  
 cccgcacctg actccccca catccaaggg cagccctgga accagtgggc tagttccttg 600  
 aaggaagccc cactcattcc tattaatccc tcagaattcc cggggggagc cttccctcct 660  
 gaaccttggt aaaaaatggg gaacgagaaa aacccccgct tggagctgtg cgtttccagc 720  
 ccctacttga gagncttttt tttggggggc g 751

<210> 41  
 <211> 229  
 <212> DNA  
 <213> Homo sapiens

<400> 41  
 cgcgcggggc cgggtcggc ccgaccggc tccgcgcggg caggcggggc ccagcgcact 60  
 cggagcccga gcccgagccg cagccgccgc ctggggcgct tgggtcggcc tcgaggacac 120  
 cggagagggg cgccacgccg ccgtggccgc agatttgaaa gaagccgaca ctaaaccacc 180  
 aatatacaac aaggccatth tgtcaaacga ggtcagcct ttaacgaaa 229

<210> 42  
 <211> 233  
 <212> DNA  
 <213> Homo sapiens

<400> 42  
 tagcagagag tcctgagcca ctgccaatat ttcccttctt ccagttgcac tattctgagg 60  
 gaaaatctga cacctaagaa atttactgtg aaaaagcatt ttaaaaagaa aagggttttag 120  
 aatatgatct attttatgca tattgtttat aaagacacat ttacaattta cttttaatat 180  
 taaaaattac catattatga aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 233

<210> 43  
 <211> 349  
 <212> DNA  
 <213> Homo sapiens

<400> 43  
 ggcacgaggg gcgagaggaa gcagggagga gagtgatttg agtagaaaag aaacacagca 60  
 ttccaggctg gccccacctc tatattgata agtagccaat gggagcgggt agccctgac 120  
 cctggccaat ggaaactgag gtaggcgggt catcgcgctg gggctctgtag tctgagcgct 180  
 acccggttgc tgctgcccac ggaccgcgga gtcggacgca ggcagaccat gtggaccctg 240  
 gtgagctggg tggccttaac agcagggctg gtggctggaa cgcgggtgcc agatgggtcag 300  
 ttctgcctg tggcctgctg cctggacccc ggaggagcca gctacagct 349

<210> 44  
 <211> 337  
 <212> DNA  
 <213> Homo sapiens

<400> 44  
 tgagggacag tactgaagac tctgcagccc tcgggacccc actcggaggg tgccctctgc 60  
 tcaggcctcc ctagcacctc cccctaacca aattctccct ggacccatt ctgagctccc 120  
 catcaccatg ggaggtgggg cctcaatcta aggccttccc tgtcagaagg gggttgtggc 180  
 aaaagccaca ttacaagctg ccatccctc cccgtttcag tggaccctgt ggcaggtgc 240  
 ttttccctat ccacaggggt gtttgtgtgt gtgcgcgtgt gcgtttcaat aaagtttgta 300  
 cactttcaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 337

<210> 45  
 <211> 1700  
 <212> DNA  
 <213> Homo sapiens

<400> 45  
 tgtttgcat aagttcatag attataat tt gtaatggaat caacaccaa tgcaaattag 60  
 aaagagagcc cactttgctc acccagtcac gtcttcccat gtaaccatag aacgttgggg 120  
 tcctgtgtct ttctagatcc acagtcttgc tctcagaaca ggctagccac accacaggcc 180  
 tagtgccagg acccatggcc tttttttaag ctcagactcc cttctgtgaa cagcaatata 240  
 cccacaactt gtacaacatt ggtgcttctt gcaagggcta cagaactatt tgatacgaaa 300  
 atgttcattg acttacacac aagagaagca caaaataaaa aattaataat taatttaatg 360  
 tctttgaaaa tgtaccat tt atttttacat ttgggggtcat aagaattgta ttacacttaa 420  
 gaatgcaata caatttgaag atcagat ttt tctccctttg tgagaatttc tcagtatgtg 480  
 tgatgactac caagaaatca tagccagtca taaattcagt gagttactca taaacgaaca 540  
 agaaccacct acttcttggg gaggtaggtc tgcttccctt caactcagga tacaactgct 600  
 ttcaactgct ttcttcacat tagctgacta attagctaga agcctgtcgt aaacaatttt 660  
 atggttgact ccttccctgg gctcagggtt ccctagaaca gagaggtccc caaatcccg 720  
 tctgtggcct gtccgcctaa gctctgcctc ctgccagatc agcaggcagc attagattct 780  
 cataggagct ggacgcctat tgtgaactgc gcatgtgcgg gatccagatt gtgcactctt 840  
 tatgagaatc taactaatgc ttgatgatct atctgaacca gaacaatttc atcctgaaac 900  
 catccccac caatccatag aaatactgtc ttccacaaaa atgatccctg gtgccaaaaa 960  
 tgttagagac cactcccta aaactctctt cttagctctc acctcctgta ttactatctc 1020

atctcagtag attgaagccc ccattcttttc cccatggatg cctcatttcc tattagggag 1080  
 gcattttttt attttttgtt tttatttttt tccgagacgg agtctcgctc tgtcgccaag 1140  
 gctggagtgc agtggcgcgga tctcggtcca ctgcaagctc cgcctcccgg gttcacgcca 1200  
 ttctcctgcc tcagcctccc aagtagctgg gactacaggg gcccgacta cggccggcta 1260  
 attttttgta ttttttagtag agacgggggtt tcaccgtggg agccaggatg gtctcgatct 1320  
 cctgacctcg tgatccgccc gccttggcct cccaaagtgc tgggattaca ggcgtgagac 1380  
 cgcgcccggc cgtcatttgg tatgtcttaa tgtgcctcag gacctagcac agtccttggg 1440  
 acccagtaga gacctatgta atgttcgtta ttcaataata aatacatgaa ttaaagagtg 1500  
 agagtggatt ttgtaatggt acgactgata gagaaatact cagtgattct aagggatggg 1560  
 gaagaacggg tggagctaga gggtgtgctc aggaactat taaatagacg ttccgcagga 1620  
 agggattgac gaagtgtgag gttaatgagg aagggaatat agaataaaa atttggtggg 1680  
 ggaaaagatc tgattcatga 1700

<210> 46  
 <211> 2419  
 <212> DNA  
 <213> Homo sapiens

<400> 46  
 taaccagcgg gccctgggc aagtgtggc tctgtgtcc ttgccttcca tttcccctct 60  
 gcacccagaa cagtgggtggc aacattcatt gccaaaggcc caaagaaaga gctacctgga 120  
 cctttttgtt tctgtttgac aacatgttta ataaataaaa atgtcttgat atcagtaaga 180  
 atcagagtct tctcactgat tctgggcata ttgatctttc cccattttc tctacttggc 240  
 tgcctcctga gaggactgca taggatagaa atgccttttt cttttctttt cgtttttttt 300  
 tttttttttt tttagatgg agtctcactc tgtcgcccag gcttaagtgc aatggcacia 360  
 tctcggtcca ctgcaacctc tctctcctgg gttcaagtga ttctcctgcc tcagcctccc 420  
 aaatagctga gattacaggc atgcaccacc acacctggct aattttttgtg ttttttagtag 480  
 agacaggggtt tcaccgtttt ggccagggtg gtcttgaact cctgacctcg ggagatccgc 540  
 ccaccttggc ctctctttgt gctgggatta caggcatgag ccactgagcc gggccacttt 600  
 ttccttatca gtcagttttt acaagtcatt agggaggtag actttacctc tctgtgaagg 660  
 aaagtatggg atgttgatct acagagagag atggaaaaat tccagggctc gtagctacta 720  
 agcagaattt ccaagatagg caaattgttt tttctgtcaa ataataagct aatattactt 780  
 ctacaaatat gagaccttgg agagaagttt ccaaggacca agtaccaaca taccaacaga 840

ttattatagt ttctctcact cttacacaca cacacacaca tatacacata tgtaatccag	900
catgaatacc aaaattcatt cagggtagcc accttttgtc ttaatcgaga gataattttg	960
atgtttgaat ggaatgctcc caggatattc tcttgtcatg gttattttat ataaaattca	1020
aaaaccaatt acattatttc ctctgtaatc ttttacttta tcaactaatg tctggcaagt	1080
gtgatgtttt ggggaagtta tagaagattc cggccaggcg cttatctcac gcttgtaatc	1140
cagcactttg ggaagctgag gcggacagat cacgaggcca agagatcaag accatcctgg	1200
acaacatggt gaaaccttgt ctctactaaa aatgtgaaaa ttagctgggc gtggtggcac	1260
acacctatag tcccagctac tcgggagggt gaggcaggag aatcgcttga acctaggagg	1320
cgagggttgc actgagccga gatcacgcca ctgcactcca gcctgggcca cagagcgaga	1380
ctccatctca aaaaaaaaaa aaaaagaaag atcccagttt atcccagttt atcccttatt	1440
cttcctcaat tctcaagatt tgtttttaag ttaacataac ttaggttaac acactctttg	1500
taaaatacac tgttcaatct acagactcag tggttagctt cctgttaact aatttctggt	1560
gacaggtact tggatatttt atttagaaaag tggttgcca taaattagtt ataagtcgcc	1620
agtttctctg ccttgtgaac acataattat tgtggtctca gtattcccta tgggtggcttc	1680
tcctgctcct ggtattgccc tgaaatgggc caaaagccgt ggctcccca tgctcagggt	1740
atagaacatt gtccagggtac cacctaggag agcccagcct cactgaaagt attcaaattt	1800
aggaatgggt ttgagaagta ggtagctggt atgtgcttag cacaagaatc tctcttcctt	1860
gggttagtct gtttcaaaac tgaaaacact gtcattcctt aagaaaatag gaaaaagtat	1920
tccaaacctc tgtcactaga aaatttgcca tattaccaaa tctcaaaaac ctctcaggaa	1980
atgagaaagt cccagtttct ggtaaactat ttgggccctt ttctcaagtt ctcttccag	2040
tgctatttcc ttgaggtgag gcaaagttac tcaagatcat cgctgccact caaggccttg	2100
atagggcaag tgaaaggcat ggaccattat tatattgatc acagcataag ctgtgaaaac	2160
ccacatcttc tccaaacatc tgcttgagc attatcatcg catagtgtgc tctggtgttc	2220
agggaaatcg ctgtttcata ggaaatcaca tggcagtggg atgggagtgt ttctgacct	2280
gccgatggta ctggcacctg agcaagcatt cctagtcctt tttggtctgg gcctcttgtt	2340
ctatcacaac cacaagctgt ttaaaataaa aacgtcaagt cacaggcagg tcattttatc	2400
ctgcgtgaat caattgaag	2419

<210> 47  
 <211> 297  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 47

tcctcagtgc acagtgctgc ctctgtctgag gggacaggag gatcacccctc ttctgtcgctt	60
cggccagtgt gtcgggctgg gccctgacaa gccacctgag gagaggctcg gagccggggcc	120
cggaccccg cgattgccgc ccgcttctct ctagtctcac gaggggtttc ccgcctcgca	180
ccccacctc tggacttgcc ttctctctc ttctccgct gtggaggag ccagcgctta	240
ggccggagcg agcctggggg ccgcccgcg tgaagacatc gcggggaccg attcacc	297

&lt;210&gt; 48

&lt;211&gt; 1192

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 48

tgagcttttt cttaatttca ttctttttt tggacactgg tggctcacta cctaaagcag	60
tctatttata ttttctacat ctaatttttag aagcctggct acaatactgc acaaacttgg	120
ttagttcaat ttttgatccc ctttctactt aatttacatt aatgctcttt ttagtatgt	180
tctttaatgc tggatcacag acagctcatt ttctcagttt tttggtattt aaaccattgc	240
attgcagtag catcatttta aaaaatgcac ctttttattt atttattttt ggctaggag	300
tttatccctt tttcgaatta tttttaagaa gatgccata taatttttgt aagaaggcag	360
taacctttca tcatgatcat aggcagttga aaaattttta caccctttttt ttcacatttt	420
acataaataa taatgctttg ccagcagtac gtggtagcca caattgcaca atatattttc	480
ttaaaaata ccagcagtta ctcatggaat atattctgog tttataaaac tagtttttaa	540
gaagaaattt tttttggcct atgaaattgt taaacctgga acatgacatt gttaatcata	600
taataatgat tcttaaatgc tgtatggttt attattttaa tgggtaaagc catttacata	660
atatagaaag atatgcatat atctagaagg tatgtggcat ttatttggat aaaattctca	720
attcagagaa atcatctgat gtttctatag tcactttgcc agctcaaaag aaaacaatac	780
cctatgtagt tgtggaagtt tatgctaata ttgtgtaact gatattaaac ctaaattgtc	840
tgcctaccct gttggtataa agatattttg agcagactgt aaacaagaaa aaaaaaatca	900
tgcattctta gcaaaattgc ctagtatgtt aatttgctca aaatacaatg tttgatttta	960
tgcactttgt cgctattaac atcctttttt tcatgtagat ttcaataatt gagtaatttt	1020
agaagcatta ttttaggaat atatagtgtt cacagtaa atcttggttt ttctatgtac	1080
attgtacaaa tttttcatct cttttgctct ttgtggttgg atctaact aactgtattg	1140
ttttgttaca tcaataaac atcttctgtg gaccaggaaa aaaaaaaaaa aa	1192

&lt;210&gt; 49

&lt;211&gt; 197

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 49

```

agacagcctt aacccacggg cgcgggagag tcgtatgggc aggggcaggc gggagcgacg      60
tggggcgacg ctcacgaacg atcagagctg cgggagacgc aacgaagccc ggaggccgca      120
ggctgcgcgc tccctcgcag cagccgggag ggcaaaagcc cccagtcctc ggcccccgcg      180
caagcgacgc cgggaaa                                     197

```

&lt;210&gt; 50

&lt;211&gt; 3293

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 50

```

taattattta tattgtaaag aattttaaca gtcttgggga cttccttgaa ggatcatttt      60
cacttttgct cagaagaaag ctctggatct atcaaataaa gaagtccttc gtgtgggcta      120
catatataga tgttttcatg aagaggagtg aaaagccaga aggatataga caaatgaggc      180
ctaagacctt tcctgccagt aactatactg tcagtagccg gcaaagtgtta caagaaattc      240
gggaatccct taggaattta tctaaacctat ctgatgctgc taaggctgag cataacatga      300
gtaaaatgtc aaccgaagat cctcgacaag tcagaaatcc acccaaattt gggacgcac      360
ataaagcctt gcaggaaatt cgaaactctc tgcttccatt tgcaaataaa acaaattctt      420
ctcggagtac ttcagaagtt aatccacaaa tgcttcaaga cttgcaagct gctggatttg      480
atgaggatat gggtatacaa gctcttcaga aaactaaca cagaagtata gaagcagcaa      540
ttgaattcat tagtaaaatg agttaccaag atcctcgacg agagcagatg gctgcagcag      600
ctgccagacc tattaatgcc agcatgaaac cagggaatgt gcagcaatca gttaaccgca      660
aacagagctg gaaagggtct aaagaatcct tagttcctca gaggcattggc ccgccactag      720
gagaaagtgt ggcctatcat tctgagagtc ccaactcaca gacagatgta ggaagacctt      780
tgtctggatc tggatatatca gcatttgctc aagctcacc tagcaacgga cagagagtga      840
acccccacc accacctcaa gtaaggagtg ttactcctcc accacctcca agaggccaga      900
ctccccctcc aagagggtaca actccacctc ccccttcctg ggaaccaaac tctcaaaca      960
agcgctattc tggaaacatg gaatacgtaa tctcccgaat ctctcctgtc ccacctgggg      1020
catggcaaga gggctatcct ccaccacctc tcaacacttc ccccatgaat cctcctaata      1080
aaggacagag aggcattagt tctgttctctg ttggcagaca accaatcatc atgcagagtt      1140
ctagcaaatt taactttcca tcaggagagc ctggaatgca gaatgggtact ggacaaactg      1200
atttcatgat acacaaaaat gttgtccctg ctggcactgt gaatcggcag ccaccacctc      1260

```

catatcctct gacagcagct aatggacaaa gcccttctgc tttacaaaca gggggatctg	1320
ctgctccttc gtcataataa aatggaagta ttcttcagtc tatgatggtg ccaaacagaa	1380
atagtcataa catggaacta tataacatta gtgtacctgg actgcaaaca aattggcctc	1440
agtcattctt tgctccagcc cagtcattcc cgagcagtgg gcatgaaatc cctacatggc	1500
aacctaacat accagtgagg tcaaattctt ttaataaccc attaggaaat agagcaagtc	1560
actctgctaa ttctcagcct tctgctacaa cagtcactgc aattacacca gctcctattc	1620
aacagcctgt gaaaagtatg cgtgtattaa aaccagagct acagactgct ttagcaccta	1680
cacacccttc ttggatacca cagccaattc aaactgttca acccagtcct ttctctgagg	1740
gaaccgcttc aaatgtgact gtgatgccac ctggtgctga agctccaaac tatcaaggac	1800
caccaccacc ctacccaaaa catctgctgc accaaaaccc atctgttcct ccatacgagt	1860
caatcagtaa gcctagcaaa gaggatcagc caagcttgcc caaggaagat gagagtgaaa	1920
agagtattga aaatgttgat agtggggata aagaaaagaa acagattaca acttcaccta	1980
ttactgttag gaaaaacaag aaagatgaag agcgaaggga atctcgtatt caaagttatt	2040
ctctcaagc atttaaattc tttatggagc aacatgtaga aaatgtactc aaatctcatc	2100
agcagcgtct acatcgtaaa aaacaattag agaatgaaat gatgcggggt ggattatctc	2160
aagatgcccc ggatcaaatg agaaagatgc ttgccccaaa agaactaat tacatccgtc	2220
ttaaaagggc taaaatggac aagtctatgt ttgtgaagat aaagacacta ggaataggag	2280
catttggtga agtctgtcta gcaagaaaag tagatactaa ggctttgtat gcaacaaaaa	2340
ctcttcgaaa gaaagatggt cttcttcgaa atcaagtcgc tcatgttaag gctgagagag	2400
atctcctggc tgaagctgac aatgaatggg tagttcgtct atattattca ttccaagata	2460
aggacaattt atactttgta atggactaca ttcttggggg tgatatgatg agcctattaa	2520
ttagaatggg catctttcca gaaagtctgg cagcattcta catagcagaa cttacctgtg	2580
cagttgaaag tgttcataaa atgggtttta ttcatagaga tattaaacct gataatattt	2640
tgattgatcg tgatggatcat attaaattga ctgactttgg cctctgcact ggcttcagat	2700
ggacacacga ttctaagtac tatcagagtg gtgaccatcc acggcaagat agcatggatt	2760
tcagtaatga atggggggat ccctcaagct gtcgatgtgg agacagactg aagccattag	2820
agcggagagc tgcacgccag caccagcgat gtctagcaca ttctttgggt gggactccca	2880
attatattgc acctgaagtg ttgctacgaa caggatacac acagttgtgt gattggtgga	2940
gtgttggtgt tattctttttt gaaatgttgg tgggacaacc tcctttcttg gcacaaacac	3000
cattagaaac acaaatgaag gtcacctgct gctatataca tcattggctc gagaagaaac	3060

tactgaacac cctgcgagag agaagcctag aaaagaaaga aagggccaaa aggttttgaa 3120  
 ctcttcatcc ctaatttgct aactgatca aaaccaagta agggctcctg aagtccatga 3180  
 gtctatcatc aatcagcaca aatgctatac tagtttgtaa ctgcgggggc agttgtgaag 3240  
 gggaaggaca gcagtcttat ccatattcca ggaagccaca gtaaactgct cga 3293

<210> 51  
 <211> 424  
 <212> DNA  
 <213> Homo sapiens

<400> 51  
 cctactctat tcagatattc tccagattcc taaagattag agatcatttc tcattctcct 60  
 aggagtactc acttcaggaa gcaaccagat aaaagagagg tgcaacggaa gccagaacat 120  
 tctctctgga aattcaacct gtttcgcagt ttctcgagga atcagcattc agtcaatccg 180  
 ggccggggagc agtcatctgt ggtgaggctg attggctggg caggaacagc gccggggcgt 240  
 gggctgagca cagcgcttcg ctctctttgc cacaggaagc ctgagctcat tcgagtagcg 300  
 gctcttccaa gctcaaagaa gcagaggccg ctgttcgttt cctttaggtc tttccactaa 360  
 agtcggagta tcttcttcca agatttcacg tcttggtggc cgttccaagg agcgcgaggt 420  
 cggg 424

<210> 52  
 <211> 706  
 <212> DNA  
 <213> Homo sapiens

<400> 52  
 tgaactctga ctgtatgaga tgtaaatac tttttaatat ttgttttagat atgacattta 60  
 ttcaaagtta aaagcaaaca cttacagaat tatgaagagg tatctgttta acatttcctc 120  
 agtcaagttc agagtcttca gagacttcgt aattaaagga acagagtgag agacatcatc 180  
 aagtggagag aaatcatagt ttaaactgca ttataaattt tataacagaa ttaaagtaga 240  
 ttttaaaaga taaaatgtgt aattttgttt atattttccc atttggaactg taactgactg 300  
 ccttgctaaa agattataga agtagcaaaa agtattgaaa tgtttgcata aagtgtctat 360  
 aataaaacta aactttcatg tgactggagt catcttgtcc aaactgcctg tgaatatatc 420  
 ttctctcaat tggaatattg tagataactt ctgctttaa aaagttttct ttaaataatc 480  
 ctactcattt ttgtgggaat ggttaagcag tttaaataat tcctgtgtat atgtctatca 540  
 cataggggtc taacagaaca atctggattc attatttcta ggacttgatc ctgctgatgc 600  
 tgaatttgca cattaaggtg tgttaacaac caaaacacag atcgatataa gaagtaagga 660

gggtggggaga ggcaaattat gatgtgctat gagttagatg tatagt

706

<210> 53  
 <211> 239  
 <212> DNA  
 <213> Homo sapiens

<400> 53  
 agtccgcggc gttccccggc tgcagccggg agggggccga ggagtgactg agccccgggc 60  
 tgtgcagtcc gacgccgact gaggcacgag cgggtgacgc tgggcctgca gcgcggagca 120  
 gaaagcagaa cccgcagagt cctccctgct gctgtgtgga cgacacgtgg gcacaggcag 180  
 aagtgggccc tgtgaccagc tgcactgggt tcgtggaagg aagctccagg actggcggg 239

<210> 54  
 <211> 641  
 <212> DNA  
 <213> Homo sapiens

<400> 54  
 tgaggcagct gctatcccca tctccctgcc tggcccccaa cctcagggct cccaggggtc 60  
 tccctggctc cctcctccag gcctgcctcc cacttcactg cgaagaccct cttgcccacc 120  
 ctgactgaaa gtagggggct ttctggggcc tagcgatctc tcctggccta tccgctgcca 180  
 gccttgagcc ctggctgttc tgtggttcct ctgctcaccg cccatcaggg ttctcttacc 240  
 aactcagaga aaaatgctcc ccacagcgtc cctggcgcag gtgggctgga cttctacctg 300  
 ccctcaaggg tgtgtatatt gtataggggc aactgtatga aaaattgggg aggagggggc 360  
 cgggcgcggg gctcacgcct gtaatccag cactttggga ggccgaggcg ggtggatcac 420  
 gaggtcagga gatcgagacc atcctggcta acatggtgaa acccgtctc tactaaaaat 480  
 acaaaaaaaaa ttagccggg cgcggtggcg ggcacctgta gtcccagcta cttgggaggc 540  
 tgaggcagga gaatggtgtg aaccgggag cggaggttgc agtgagctga gatcgtgcta 600  
 ctgcactcca gcctggggga cagaaagaga ctccgtctca a 641

<210> 55  
 <211> 493  
 <212> DNA  
 <213> Homo sapiens

<400> 55  
 tttctgtgaa gcagaagtct gggaatcgat ctggaaatcc tcctaatttt tactccctct 60  
 cccccgact cctgattcat tgggaagttt caaatcagct ataactggag agagctgaag 120  
 attgatggga tcgttgccct atgcctttgt tttggtttta caaaaaggaa acttgacaga 180  
 ggatcatgct atacttaaaa aatacaacat cgcagaggaa gtagactcat attaaaaata 240

cttactaata ataacgtgcc tcatgaagta aagatccgaa aggaattgga ataaaacttt 300  
 cctgcatctc aagccaaggg ggaaacacca gaatcaagtg ttccgcgtga ttgaagacac 360  
 cccctcgtcc aagaatgcaa agcacatcca ataaaagagc tggattataa ctctctttct 420  
 ttctctgggg gccgtggggg gggagctggg gcgagaggtg ccgttgggcc ccgttgcttt 480  
 tcctctggga ggg 493

<210> 56  
 <211> 5282  
 <212> DNA  
 <213> Homo sapiens

<400> 56  
 tgaagtcaac atgcctgccc caaacaataa tgcaaaaggt tactaaagc agtagaaata 60  
 atatgcattg tcagtgatgt tccatgaaac aaagctgcag gctgtttaag aaaaaataac 120  
 acacatataa acatcacaca cacagacaga cacacacaca cacaacaatt aacagtcttc 180  
 aggcaaaacg tcgaatcagc tattttactgc caaagggaaa tatcatttat tttttacatt 240  
 attaagaaaa aaagatttat ttattttaaga cagtcccatc aaaactcctg tctttggaaa 300  
 tccgaccact aattgccaag caccgcttgc tgtggctcca cctggatggt ctgtgcctgt 360  
 aaacatagat tcgctttcca tgttggtggc cggatcacca tctgaagagc agacggatgg 420  
 aaaaaggacc tgatcattgg ggaagctggc tttctggctg ctggaggctg gggagaaggt 480  
 gttcattcac ttgcatttct ttgccctggg ggctgtgata ttaacagagg gagggttcct 540  
 gtggggggaa gtccatgcct ccctggcctg aagaagagac tctttgcata tgactcacat 600  
 gatgcatacc tgggtgggagg aaaagagttg ggaacttcag atggacctag taccactga 660  
 gatttccacg ccgaaggaca gcgatgggaa aaatgccctt aaatcatagg aaagtatttt 720  
 ttttaagctac caattgtgcc gagaaaagca ttttagcaat ttatacaata tcatccagta 780  
 ccttaagccc tgattgtgta tattcatata ttttggatac gcacccccca actcccaata 840  
 ctggctctgt ctgagtaaga aacagaatcc tctggaactt gaggaagtga acatttcggt 900  
 gacttccgca tcaggaaggc tagagttacc cagagcatca ggccgccaca agtgccctgct 960  
 tttaggagac cgaagtccgc agaacctgcc tgtgtcccag cttggaggcc tggtcctgga 1020  
 actgagccgg ggccctcact ggcctcctcc agggatgatc aacagggcag tgtggtctcc 1080  
 gaatgtctgg aagctgatgg agctcagaat tccactgtca agaaagagca gtagaggggt 1140  
 gtggctgggc ctgtcacctt ggggcccctc aggtaggccc gttttcacgt ggagcatggg 1200  
 agccacgacc cttcttaaga catgtatcac tgtagaggga aggaacagag gccctgggccc 1260  
 cttcctatca gaaggacatg gtgaaggctg ggaacgtgag gagaggcaat ggccacggcc 1320

cattttggct gtagcacatg gcacgttggc tgtgtggcct tggcccacct gtgagtttaa	1380
agcaaggctt taaatgactt tggagagggc cacaaatcct aaaagaagca ttgaagtgag	1440
gtgtcatgga ttaattgacc cctgtctatg gaattacatg taaaacatta tcttgtcact	1500
gtagtttggc tttatttgaa aacctgacaa aaaaaaagtt ccagggtgtgg aatatggggg	1560
ttatctgtac atcctggggc attaaaaaaa aaatcaatgg tggggaacta taaagaagta	1620
acaaaagaag tgacatcttc agcaaataaa ctaggaaatt ttttttctt ccagtttaga	1680
atcagccttg aaacattgat ggaataactc tgtggcatta ttgcattata taccatttat	1740
ctgtattaac tttggaatgt actctgttca atgtttaatg ctgtggttga tatttcgaaa	1800
gctgctttaa aaaaatacat gcctctcagc gtttttttgt ttttaattgt atttagttat	1860
ggcctataca ctatttgtga gcaaagggtga tcgttttctg tttgagattt ttatctcttg	1920
attcttcaaa agcattctga gaagggtgaga taagccctga gtctcagcta cctaagaaaa	1980
acctggatgt cactggccac tgaggagctt tgtttcaacc aagtcattgt catttccacg	2040
tcaacagaat tgtttattgt gacagttata tctgttgctc ctttgacctt gtttcttgaa	2100
ggtttcctcg tccctgggca attccgcatt taattcatgg tattcaggat tacatgcatg	2160
tttggttaaa cccatgagat tcattcagtt aaaaatccag atggcaaagt accagcagat	2220
tcaaattctat ggtgggttga ctttagaga gttgctttac gtggcctgtt tcaacacaga	2280
cccaccaga gccctcctgc cctccttccg cgggggcttt ctcatggctg tccttcaggg	2340
tcttcttgaa atgcagtggc gcttacgctc caccaagaaa gcaggaaacc tgtggtatga	2400
agccagacct ccccgccggg cctcaggga cagaatgatc agacctttga atgattctaa	2460
tttttaagca aaatattatt ttatgaaagg ttacattgt caaagtgatg aatatggaat	2520
atccaatcct gtgctgctat cctgccaaaa tcattttaat ggagtcagtt tgcagtatgc	2580
tccacgtggc aagatcctcc aagctgcttt agaagtaaca atgaagaacg tggacgcttt	2640
taatataaag cctgttttgt ctctgttgtg tgttcaaacg ggattcacag agtatattgaa	2700
aatgtatat atattaagag gtcacggggg ctaattgctg gctggctgcc ttttgctgtg	2760
gggttttgtt acctggtttt aataacagta aatgtgccca gcctcttggc ccagaactg	2820
tacagtattg tggctgcact tgccttaaga gtagttgatg ttgcattttc cttattgtta	2880
aaaacatgtt agaagcaatg aatgtatata aaagcctcaa ctagtcattt ttttctctc	2940
ttcttttttt tcattatata taattatttt gcagttgggc aacagagaac catccctatt	3000
ttgtattgaa gagggattca catctgcac ttaactgctc tttatgaatg aaaaaacagt	3060
cctctgtatg tactcctctt tacactggcc agggtcagag ttaaataagag tatatgcact	3120

ttccaaattg gggacaaggg ctctaaaaaa agccccaaaa ggagaagaac atctgagaac	3180
ctcctcggcc ctcccagtc ctcgctgcac aaatactccg caagagaggc cagaatgaca	3240
gctgacaggg tctatggcca tcgggtcgtc tccgaagatt tggcaggggc agaaaactct	3300
ggcaggctta agatttgga taaagtcaca gaatcaagga agcacctcaa tttagttcaa	3360
acaagacgcc aacattctct ccacagctca cttacctctc tgtgttcaga tgtggccttc	3420
catttatatg tgatctttgt tttattagta aatgcttatc atctaaagat gtagctctgg	3480
cccagtggga aaaattagga agtgattata aatcgagagg agttataata atcaagatta	3540
aatgtaaata atcaggggcaa tcccaacaca tgtctagctt tcacctccag gatctattga	3600
gtgaacagaa ttgcaaatag tctctatctg taattgaact tatcctaaaa caaatagttt	3660
ataaatgtga acttaaaactc taattaattc caactgtact ttttaaggcag tggctgtttt	3720
tagactttct tatcacttat agttagtaat gtacacctac tctatcagag aaaaacagga	3780
aaggctcgaa atacaagcca ttctaaggaa attagggagt cagttgaaat tctattctga	3840
tcttattctg tgggtgtctt tgcagcccag acaaatgtgg ttacacactt ttttaagaaat	3900
acaattctac attgtcaagc ttatgaaggt tccaatcaga tctttattgt tattcaattt	3960
ggatctttca gggatttttt ttttaaatata ttatgggaca aaggacattt gttggagggg	4020
tgggagggag gaacaatttt taaatataaa acattcccaa gtttggatca gggagttgga	4080
agttttcaga ataaccagaa ctaaggggat gaaggacctg tattgggggtc gatgtgatgc	4140
ctctgcgaag aaccttgtgt gacaaatgag aaacattttg aagtttgtgg tacgaccttt	4200
agattccaga gacatcagca tggctcaaag tgcagctccg tttggcagtg caatgggtata	4260
aatttcaagc tggatatgtc taatgggtat ttaaacaata aatgtgcagt ttttaactaac	4320
aggatattta atgacaacct tctgggttgg aggacatct gtttctaaat gtttattatg	4380
tacaatacag aaaaaaattt tataaaatta agcaatgtga aactgaattg gagagtgata	4440
atacaagtcc tttagtctta ccagtgatc cattctgttc catgtctttg gacaacctatg	4500
accttgga atcatgaaat atgcatctca ctggatgcaa agaaaatcag atggagcatg	4560
aatgggtactg taccggttca tctggactgc ccagaaaaa taacttcaag caaacatcct	4620
atcaacaaca aggttgttct gcataccaag ctgagcacag aagatgggaa cactgggtgga	4680
ggatggaaag gctcgtcaa tcaagaaaat tctgagacta ttaataaata agactgtagt	4740
gtagatactg agtaaatacca tgcacctaaa ctttttgga aatctgccgt gggccctcca	4800
gatagctcat ttcattaagt ttttccctcc aaggtagaat ttgcaagagt gacagtggat	4860
tgcatttctt ttggggaagc tttcttttgg tggttttgtt tattatacct tcttaagttt	4920
tcaaccaagg tttgcttttg ttttgagtta ctgggggttat ttttgtttta aataaaaata	4980

agtgtacaat aagtgttttt gtattgaaag cttttgttat caagattttc atactttttac 5040  
 cttccatggc tctttttaag attgatactt ttaagagggtg gctgatattc tgcaacactg 5100  
 tacacataaa aaatacggta aggatacttt acatgggttaa ggtaaagtaa gtctccagtt 5160  
 ggccaccatt agctataatg gcactttgtt tgtgttggtg gaaaaagtca cattgccatt 5220  
 aaactttcct tgtctgtcta gttaatatgtg tgaagaaaaa taaagtacag tgtgagatac 5280  
 tg 5282

<210> 57  
 <211> 117  
 <212> DNA  
 <213> Homo sapiens

<400> 57  
 attcggggcg agggaggagg aagaagcgga ggaggcggt cccgctcgca gggccgtgca 60  
 cctgcccgcc cgcccgtcg ctcgctcgcc cgccgcgccg cgctgccgac cgccagc 117

<210> 58  
 <211> 430  
 <212> DNA  
 <213> Homo sapiens

<400> 58  
 tgatccaggg agccccacc atccggggggg accccgagtg tcctctcttc tacaatgagc 60  
 agcaggaggc ttgcggggtg cacaccagc ggatgcagta gaccgcagcc agccggtgcc 120  
 tggcgcccct gcccccgcc cctctccaaa caccggcaga aaacggagag tgcttggggtg 180  
 gtgggtgctg gaggattttc cagttctgac acacgtatth atatttgga agagaccagc 240  
 accgagctcg gcacctcccc ggcctctctc ttcccagctg cagatgccac acctgctcct 300  
 tcttgctttc cccgggggag gaagggggtt gtggtcgggg agctggggta caggtttggg 360  
 gagggggaag agaaattttt atttttgaac ccctgtgtcc cttttgcata agattaaagg 420  
 aaggaaaagt 430

<210> 59  
 <211> 192  
 <212> DNA  
 <213> Homo sapiens

<400> 59  
 tcctaggcgg cggccgcggc ggaggaggca gcagcggcgg cggcagtgga ggcggcgaag 60  
 gtggcggcgg ctcggccagt actcccggcc cccgccattt cggactggga gcgagcgagg 120  
 cgcaggcact gaaggcgagg gcggggccag aggctcagcg gctcccagggt gcgggagaga 180  
 ggctgctga aa 192

<210> 60  
 <211> 4172  
 <212> DNA  
 <213> Homo sapiens

<400> 60  
 taaatacaat ttgtactttt ttcttaaggc atactagtagc aagtggtaat ttttgtacat 60  
 tacactaaat tatttagcatt tgttttagca ttacctaatt tttttcctgc tccatgcaga 120  
 ctgttagctt ttaccttaaa tgcttatttt aaaatgacag tggaagtttt tttttcctcg 180  
 aagtgccagt attcccagag ttttggtttt tgaactagca atgcctgtga aaaagaaact 240  
 gaatacctaa gattttctgtc ttgggggtttt tgggtgcatgc agttgattac ttcttatttt 300  
 tcttaccaag tgtgaatgtt ggtgtgaaac aaattaatga agcttttgaa tcatccctat 360  
 tctgtgtttt atctagtcac ataaatggat taattactaa tttcagttga gaccttctaa 420  
 ttggttttta ctgaaacatt gagggacaca aatttatggg cttcctgatg atgattcttc 480  
 taggcacat gtcctatagt ttgtcatccc tgatgaatgt aaagttacac tgttcacaaa 540  
 ggttttgtct cctttccact gctattagtc atggtcactc tccccaaaat attataatttt 600  
 ttctataaaa agaaaaaaat ggaaaaaaat tacaaggcaa tggaaactat tataaggcca 660  
 tttccttttc acattagata aattactata aagactocta atagcttttt cctgttaagg 720  
 cagaccagat atgaatggga ttattatagc aaccattttg gggctatatt tacatgctac 780  
 taaattttta taataattga aaagatttta acaagtataa aaaaattctc ataggaatta 840  
 aatgtagtct ccctgtgtca gactgctctt tcatagtata actttaaatc ttttcttcaa 900  
 cttgagtctt tgaagatagt tttaattctg cttgtgacat taaaagatta tttgggccag 960  
 ttatagctta ttaggtgttg aagagaccaa ggttgcaagc caggccctgt gtgaaccttg 1020  
 agctttcata gagagtttca cagcatggac tgtgtgcccc acggtcaccc gagtgggtgt 1080  
 acgatgcatt ggtagtcaa aaatggggag ggactagggc agtttgata gctcaacaag 1140  
 atacaatctc actctgtggt ggtcctgctg acaaatcaag agcattgctt ttgtttctta 1200  
 agaaaacaaa ctctttttta aaaattactt ttaaataatta actcaaaagt tgagattttg 1260  
 ggggtgggtgt gtgccaagac attaatTTTT tttttaaaca atgaagtga aaagtTTTtac 1320  
 aatctctagg tttggctagt tctcttaaca ctggttaaat taacattgca taaacacttt 1380  
 tcaagtctga tccatattta ataatgcttt aaaataaaaa taaaaacaat ccttttgata 1440  
 aatttaaaat gttacttatt ttaaaataaa tgaagtgaga tggcatgggt aggtgaaagt 1500  
 atcactggac taggttggtg gtgacttagg ttctagatag gtgtctttta ggactctgat 1560

tttgaggaca	tcacttacta	tccattttctt	catgttaaaa	gaagtcacat	caaactctta	1620
gttttttttt	tttacactat	gtgattttata	ttccattttac	ataaggatac	acttattttgt	1680
caagctcagc	acaatctgta	aattttttaac	ctatgtttaca	ccatcttcag	tgccagtcct	1740
gggcaaaatt	gtgcaagagg	tgaagtttat	atttgaatat	ccattctcgt	tttaggactc	1800
ttcttccata	ttagtgtcat	cttgccctccc	taccttccac	atgccccatg	acttgatgca	1860
gttttaatac	ttgtaattcc	cctaaccata	agattttactg	ctgctgtgga	tatctccatg	1920
aagttttccc	actgagtcac	atcagaaatg	ccctacatct	tatttttctc	agggtcaag	1980
agaatctgac	agataccata	aagggttttg	acctaatac	taattttcag	gtggtggctg	2040
atgctttgaa	catctctttg	ctgcccatac	cattagcgac	agtaggattt	ttcaaccctg	2100
gtatgaatag	acagaaccct	atccagtgga	aggagaattt	aataaagata	gtgcagaaag	2160
aattccttag	gtaatctata	actaggacta	ctcctggtaa	cagtaataca	ttccattgtt	2220
ttagtaacca	gaaatcttca	tgcaatgaaa	aatactttaa	ttcatgaagc	ttactttttt	2280
tttttttggtg	tcagagtctc	gctcttgtca	cccaggctgg	aatgcagtgg	cgccatctca	2340
gctcactgca	accttccatc	ttcccagggt	caagcgattc	tcgtgcctcg	gcctcctgag	2400
tagctgggat	tacaggcggtg	tgcaactaac	tcaactaatt	tttgtatttt	taggagagac	2460
ggggtttcac	ctgttggtcc	ggctgggtctc	gaactcctga	cctcaagtga	ttcaccacc	2520
ttggcctcat	aaacctgttt	tgcaagaactc	atttattcag	caaataattt	ttgagtgcct	2580
accagatgcc	agtcaccgca	caaggcactg	ggtatatggt	atccccaaac	aagagacata	2640
atcccgggtcc	ttaggtactg	ctagtgtggt	ctgtaatatc	ttactaaggc	ctttgggtata	2700
cgacccagag	ataacacgat	gcgtattttt	gttttgcaaa	gaaggggttt	ggtctctgtg	2760
ccagctctat	aattgttttg	ctacgattcc	actgaaactc	ttcgatcaag	ctactttatg	2820
taaatcactt	cattgtttta	aaggaataaa	cttgattata	ttgttttttt	atttggcata	2880
actgtgatcc	ttttaggaca	attactgtac	acattaaggt	gtatgtcaga	tattcatatt	2940
gacccaaatg	tgtaatatcc	cagttttctc	tgcataagta	attaaaatat	acttaaaaat	3000
taatagtttt	atctgggtac	aaataaacag	tgccatgaact	agttcacaga	caagggaaac	3060
ttctatgtaa	aaatcactat	gatttctgaa	ttgctatgtg	aaactacaga	tctttggaac	3120
actgtttagg	taggggtgta	agacttgaca	cagtacctcg	ttctacaca	gagaaagaaa	3180
tggccatact	tcaggaactg	cagtgccttat	gaggggatat	ttaggcctct	tgaatttttg	3240
atgtagatgg	gcattttttt	aaggtagtgg	ttaattacct	ttatgtgaac	tttgaatggt	3300
ttaacaaaag	atttgttttt	gtagagattt	taaaggggga	gaattctaga	aataaatggt	3360
acctaattat	tacagcctta	aagacaaaaa	tccttggtga	agtttttttt	aaaaaagact	3420

aaattacata gacttaggca ttaacatggt tgtggaagaa tatagcagac gtatattgta 3480  
 tcatttgagt gaatgttccc aagtaggcat tctaggctct atttaactga gtcacactgc 3540  
 ataggaattht agaacctaac ttttataggt tatcaaaact gttgtcacca ttgcacaatt 3600  
 ttgtcctaata atatacatag aaactttgtg gggcatgtta agttacagtt tgcacaagtt 3660  
 catctcattht gtattccatt gattttttttt tttcttctaa acattttttt ttcaaaacag 3720  
 tatatataac ttttttttagg ggattttttt tagacagcaa aaaactatct gaagattttcc 3780  
 atttgtcaaa aagtaatgat ttcttgataa ttgtgtagtg aatgtttttt agaaccacgc 3840  
 agttacottg aaagctgaat ttatatthtag taacttctgt gtttaactg gatagcatga 3900  
 attctgcatt gagaaactga atagctgtca taaaatgctt tctttcctaa agaaagatac 3960  
 tcacatgagt tcttgaagaa tagtcataac tagattaaga tctgtgtttt agtttaatag 4020  
  
 tttgaagtgc ctgtttggga taatgatagg taatttagat gaatttaggg gaaaaaaaag 4080  
 ttatctgcag ttatgttgag ggcccatctc tccccccaca cccccacaga gctaactggg 4140  
 ttacagtgtt ttatccgaaa gtttccaatt cc 4172

<210> 61  
 <211> 238  
 <212> DNA  
 <213> Homo sapiens

<400> 61  
 ccattgtgct ggaaaggcgc gcaacggcgg cgacggcggc gacccaccg cgcacctgc 60  
 caggcctccg cgcccagccg cccacgcgc cccgcgcccc gcgccccgac cttttcttcg 120  
 cgccccgcgc cctcgccccg ccaggccccc ttgccggcca cccgccaggc cccgcgcggg 180  
 cccgccgcgc gccccaggacc ggcccgcgc cccgaggccg cccgccgcgc gcgcccgc 238

<210> 62  
 <211> 547  
 <212> DNA  
 <213> Homo sapiens

<400> 62  
 ggccccgcag ctctggccac agggacctct gcagtgcgcc ctaagtgacc cggacacttc 60  
 cgaggggggc atcaccgcct gtgtatataa cgtttccggg attactctgc tacacgtagc 120  
 ctttttactt ttgggggtttt gtttttgttc tgaactttcc tgttaccttt tcagggtga 180  
 tgtcacatgt aggtggcgtg tatgagtgga gacgggcctg ggtcttgggg actggagggc 240  
 aggggtcctt ctgcccctgg ggtcccaggg tgctctgcct gctcagccag gcctctcctg 300  
 ggagccactc gccagagac tcagcttggc caacttgggg ggctgtgtcc acccagcccc 360

cccgtcctgt gggctgcaca gctcaccttg ttccctcctg ccccggttcg agagccgagt 420  
 ctgtgggcac tctctgcctt catgcacctg tcctttctaa cacgtcgcct tcaactgtaa 480  
 tcacaacatc ctgactccgt catttaataa agaaggaaca tcaggcatgc taaaaaaaaa 540  
 aaaaaaa 547

<210> 63  
 <211> 102  
 <212> DNA  
 <213> Homo sapiens

<400> 63  
 gaattccggc aaacatgagg cagctgccag cgggcctggg cagtcttgtc tgcctcggtc 60  
 gtgaagtggg gaggctggca acagttttct tcagcgccca gg 102

<210> 64  
 <211> 2017  
 <212> DNA  
 <213> Homo sapiens

<400> 64  
 gacacgtcca aaggagtgca tggccacagc cacctccacc cccaagaaac ctccatcctg 60  
 ccaggagcag cctccaagaa acttttaaaa aatagatttg caaaaagtga acagattgct 120  
 acacacacac acacacacac acacacacac acacacagcc attcatctgg gctggcagag 180  
 gggacagagt tcagggaggg gctgagtctg gctagggggc gagtccagag gccccagcca 240  
 gcccttccca ggccagcgag gcgaggctgc ctctgggtga gtggctgaca gagcaggtct 300  
 gcaggccacc agctgctgga tgtcaccaag aaggggctcg agtgccctgc aggagggctc 360  
 aatcctccgg tcccacctcg tcccgttcat ccattctgct ttcttgccac acagtggccg 420  
 gccaggtc ccctggtctc ctccccgtag ccactctctg ccactacct atgcttctag 480  
 aaagcccctc acctcaggac ccagaggac cagctggggg gcagggggga gagggggtaa 540  
 tggaggccaa gcctgcagct ttctggaaat tcttccttg gggctccagt atcccctgct 600  
 actccactga cctggaagag ctgggtacca ggccaccac tgtggggcaa gcctgagtgg 660  
 tgaggggcca ctggcatcat tctccctcca tggcaggaag gcgggggatt tcaagtttag 720  
 ggattgggtc gtggtggaga atctgagggc actctgccag ctccacaggt ggatgagcct 780  
 ctcttgccc cagtccctgt tcagtgggaa tgcagtgggt ggggctgtac acaccctcca 840  
 gcacagactg ttccctccaa ggtcctctta ggtcccgggg aggaacgtgg ttcagagact 900  
 ggcagccagg gagccccggg cagagctcag aggagtctgg gaaggggcgt gtccctcctc 960  
 ttctgtagt gccctccca tggcccagca gcttggtga gccctctcc tgaagcagct 1020

```

gtgcgccgtc cctctgcctt gcacaaaaag cacaagacat tccttagcag ctccagcgag 1080
ccctagtggg agcccagcac actgcttctc ggaggccagg ccctcctgct ggctgagctt 1140
gggcccgggtg gcccgaatat ggtggccctg gggaagaggc cttgggggtc tgctctgtgc 1200
ctgggatcag tggggcccca aagcccagcc cggctgacca acattcaaaa gcacaaaccc 1260
tggggactct gcttggctgt cccctccatc tggggatgga gaatgcagcc caaagctgga 1320
gccaatggtg agggctgaga gggctgtggc tgggtggtca gcagaaaccc caggaggaga 1380
gagatgctgc tcccgcctga ttggggcctc acccagaagg aaccgggtcc cagccgcatg 1440
gcccctccag gaacattccc acataatata ttccatcaca gccagcccag ctccactcag 1500
ggctggcccg gggagtcccc gtgtgcccc aagaggctagc ccagggtga gcagggccct 1560
cagaggaaag gcagtatggc ggaggccatg gggggccctc ggcatcaca cacagcctgg 1620
cctcccctgc ggagctgcat ggacgcctgg ctccaggctc caggctgact ggggcctctg 1680
cctccaggag ggcatcagct ttccctggct cagggatctt ctccctcccc tcaccogctg 1740
cccagccctc ccagctgatg tcaactctgc tctaagccaa ggctcagga gagcatcacc 1800
accacaccct gcggccttgc cttggggcca gactggctgc acagcccaac caggaggggt 1860
ctgcctccca cgctgggaca cagaccggcc gcatgtctgc atggcagaag cgtctccctt 1920
gccacggcct gggaggggtg ttctgtttct cagcatccac taatattcag tcctgtatat 1980
tttaataaaa taaacttgac aaaggaaaaa aaaaccg 2017

```

<210> 65  
 <211> 97  
 <212> DNA  
 <213> Homo sapiens

```

<400> 65
gtccaggaac tcctcagcag cgcctccttc agctccacag ccagacgccc tcagacagca 60
aagcctaccc ccgcgccgcg ccctgcccgc cgctgcg 97

```

<210> 66  
 <211> 1474  
 <212> DNA  
 <213> Homo sapiens

```

<400> 66
aagtctaattg atcatattta tttatttata tgaaccatgt ctattaattt aattatttaa 60
taatatttat attaaactcc ttatgttact taacatcttc tgtaacagaa gtcagtactc 120
ctgttgcgga gaaaggagtc atacttctga agacttttat gtcactactc taaagatttt 180
gctgttgctg ttaagtttgg aaaacagttt ttattctgtt ttataaacca gagagaaatg 240
agttttgacg tcttttttact tgaatttcaa cttatattat aaggacgaaa gtaaagatgt 300

```

```

ttgaatactt aaacactatc acaagatgcc aaaatgctga aagttttttac actgtcgatg      360
tttccaatgc atcttccatg atgcattaga agtaactaat gtttgaaatt ttaaagtact      420
tttgggtatt tttctgtcat caaacaaaac aggtatcagt gcattattaa atgaatatTT      480
aaattagaca ttaccagtaa tttcatgtct acttttttaa atcagcaatg aaacaataat      540
ttgaaatttc taaattcata gggtagaatc acctgtaaaa gcttgtttga tttcttaaag      600
ttattaaact tgtacatata ccaaaaagaa gctgtcttgg atttaaactct gtaaaatcag      660
atgaaatttt actacaattg cttgttaaaa tattttataa gtgatgttcc tttttacca      720
agagtataaa ccttttttagt gtgactgtta aaacttcctt ttaaataaaa atgccaaatt      780
tattaagggtg gtggagccac tgcagtgtta tctcaaaaata agaatacctt gttgagatat      840
tccagaatct gtttatatgg ctggtaacat gtaaaaaacc cataaccccg ccaaaagggg      900
tcctaccctt gaacataaag caataaccaa aggagaaaag ccaaattat tggttccaaa      960
tttaggggtt aaactttttg aagcaaaact ttttttagcc ttgtgactg cagacctggt     1020
actcagattt tgctatgagg ttaatgaagt accaagctgt gcttgaataa cgatatgttt     1080
tctcagattt tctgtgttac agtttaattt agcagtccat atcacattgc aaaagtagca     1140
atgacctcat aaaatacctc ttcaaaatgc ttaaattcat ttcacacatt aattttatct     1200
cagtcttgaa gccaatcag taggtgcatt ggaatcaagc ctggctacct gcagtctgtt     1260
ccttttcttt tcttctttta gccattttgc taagagacac agtcttctca aacacttcgt     1320
ttctcttatt ttgttttact agttttaaga tcagagttca ctttctttgg actctgccta     1380
tattttctta cctgaacttt tgcaagtttt caggtaaacc tcagctcagg actgctatTT     1440
agctcctctt aagaagatta aaaaaaaaaa aaaa                                     1474

```

<210> 67  
 <211> 99  
 <212> DNA  
 <213> Homo sapiens

```

<400> 67
gcgcccggcc cccacccctc gcagcacccc gcgccccgcg ccctcccagc cgggtccagc      60
cggagccatg gggccggagc cgcagtgagc accatggag                                99

```

<210> 68  
 <211> 614  
 <212> DNA  
 <213> Homo sapiens

```

<400> 68
tgaaccagaa ggccaagtcc gcagaagccc tgatgtgtcc tcaggagca ggggaaggcct      60

```

gactttctgct ggcatacaaga ggtgggaggg ccctccgacc acttccaggg gaacctgcca 120  
 tgccaggaac ctgtcctaag gaaccttcct tcctgcttga gttcccagat ggctggaagg 180  
 ggtccagcct cggttgaaga ggaacagcac tggggagctt ttgtggattc tgaggccctg 240  
 cccaatgaga ctctaggggc cagtggatgc cacagcccag cttggccctt tccttccaga 300  
 tcctgggtac tgaaagcctt agggaagctg gcctgagagg ggaagcggcc ctaaggaggt 360  
 gtctaagaac aaaagcgacc cattcagaga ctgtccctga aacctagtag tgccccccat 420  
 gaggaaggaa cagcaatggg gtcagtatcc aggccttcta cagagtgcct ttctgttttag 480  
 tttttacttt ttttgttttg ttttttttaa gacgaaataa agaccagggg gagaatgggt 540  
 gttgtatggg gaggcaagtg tgggggggtc ttctccacac ccactttgtc catttgcaaa 600  
 tatatttttg aaaa 614

<210> 69  
 <211> 36  
 <212> DNA  
 <213> Artificial

<220>  
 <223> Description of Artificial Sequence: Primer

<400> 69  
 aaagtcgacg taatcgcgga ggcttggggc agccgg 36

<210> 70  
 <211> 30  
 <212> DNA  
 <213> Artificial

<220>  
 <223> Description of Artificial Sequence: Primer

<400> 70  
 tttgcgactg gtcagctgcg ggatcccaag 30

<210> 71  
 <211> 33  
 <212> DNA  
 <213> Artificial

<220>  
 <223> Description of Artificial Sequence: Primer

<400> 71  
 aagtcgacgt aagagctcca gagagaagtc gag 33

<210> 72  
 <211> 33  
 <212> DNA  
 <213> Artificial

<220>  
<223> Description of Artificial Sequence: Primer

<400> 72  
aaaccgcgggc agcaaggcaa ggctccaatg cac 33

<210> 73  
<211> 39  
<212> DNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Primer

<400> 73  
gccgggcagg aggaaggagc ctccctcagg gtttcggga 39

<210> 74  
<211> 30  
<212> DNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Primer

<400> 74  
ctgcactaga gacaaagacg tgatgttaat 30

<210> 75  
<211> 66  
<212> DNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Polylinker

<400> 75  
gaacaaatgt cgacgggggc ccctagcaga tctagcgtg gatcccccg ggagctcaug 60  
gaagac 66

<210> 76  
<211> 30  
<212> DNA  
<213> Artificial

<220>  
<223> Description of Artificial Sequence: Primer

<400> 76  
cggtgttggg cgcgttatatt atcggagttg 30

<210> 77  
<211> 30  
<212> DNA

<213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 77  
 ttggcgaaga atgaaaatag gggtgtact 30

<210> 78  
 <211> 22  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 78  
 ggtgaaggtc ggagtcaacg ga 22

<210> 79  
 <211> 21  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 79  
 gagggatctc gctcctggaa g 21

<210> 80  
 <211> 55  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 80  
 aaagtcgacg taaccgccag atttgaatcg cgggaccctg tggcagaggt ggcgg 55

<210> 81  
 <211> 54  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 81  
 aaaggatccg ggcaacgtcg gggcacccat gccgccgccg ccacctctgc caac 54

<210> 82  
 <211> 40  
 <212> DNA  
 <213> Artificial

<211> 31  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 87

agcccatggt gctcactgcg gctccggccc c

31

<210> 88  
 <211> 22  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 88

agactctgaa ccagaaggcc aa

22

<210> 89  
 <211> 36  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 89

ctcggtagca gttttccaaa atatatttgc aaatgg

36

<210> 90  
 <211> 58  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 90

cccaagcttc gcgcccggcc cccaccacct cgcagcaccc cgcgccccgc gccctccc

58

<210> 91  
 <211> 61  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Primer

<400> 91

ggcccatgg ctccggctgg acccggtgg gaccggctg ggagggcgcg ggagggcgcg

60

g

61

<210> 92  
 <211> 7008  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Expression Vector

<400> 92

```

gacggatcgg gagatctccc gatcccctat ggtgcactct cagtacaatc tgctctgatg      60
ccgcatagtt aagccagtat ctgctccctg cttgtgtgtt ggaggtcgct gagtagtgcg      120
cgagcaaaat ttaagctaca acaaggcaag gcttgaccga caattgcatg aagaatctgc      180
ttaggggttag gcgttttgcg ctgcttcgcg atgtacgggc cagatatacg cgttgacatt      240
gattattgac tagttattaa tagtaatcaa ttacgggggtc attagttcat agcccatata      300
tggagttccg cgttacataa cttacggtaa atggcccgcg tggtgaccg cccaacgacc      360
cccgccatt gacgtcaata atgacgtatg ttcccatagt aacgccaata gggactttcc      420
attgacgtca atgggtggag tattttacggt aaactgcccc cttggcagta catcaagtgt      480
atcatatgcc agtacgccc cctattgacg tcaatgacgg taaatggccc gcctggcatt      540
atgcccgagta catgacctta tgggaactttc ctacttggca gtacatctac gtattagtca      600
tcgctattac catggtgatg cggttttggc agtacatcaa tgggcgtgga tagcggtttg      660
actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc      720
aaaatcaacg ggactttcca aaatgtcgta acaactccgc ccattgacg caaatgggcg      780
gtaggcgtgt acggtgggag gtctatataa gcagagctct ctggctaact aagctttcgg      840
cgcgccgagg taccatggga tccgaagacg ccaaaaacat aaagaaaggc ccggcgccat      900
tctatcctct agaggatgga accgctggag agcaactgca taaggctatg aagagatacg      960
ccctggttcc tggaacaatt gcttttacag atgcacatat cgaggatgaac atcacgtacg     1020
cggaataact cgaaatgtcc gttcggttgg cagaagctat gaaacgatat gggctgaata     1080
caaatcacag aatcgtcgta tgcagtgaat actctcttca attctttatg ccggtggttg     1140
gcgcgttatt tatcgagatt gcagttgcgc ccgcgaacga catttataat gaacgtgaat     1200
tgctcaacag tatgaacatt tcgcagccta ccgtagtggt tgtttccaaa aaggggttgc     1260
aaaaaatttt gaacgtgcaa aaaaaattac caataatcca gaaaattatt atcatggatt     1320
ctaaaacgga ttaccagga tttcagtcga tgtacacgtt cgtcacatct catctacctc     1380
ccggttttaa tgaatacgat tttgtaccag agtcctttga tcgtgacaaa acaattgcac     1440
tgataatgaa ttctctgga tctactgggt tacctaaggg tgtggccctt ccgcatagaa     1500
ctgcctgcgt cagattctcg catgccagag atcctatttt tggcaatcaa atcattccgg     1560

```

atactgcgat ttttaagtgtt gttccattcc atcacggttt tggaatgttt actacactcg	1620
gatatttgat atgtggattt cgagtcgtct taatgtatag atttgaagaa gagctgtttt	1680
tacgatccct tcaggattac aaaattcaaa gtgcgttgct agtaccaacc ctattttcat	1740
tcttcgccaa aagcactctg attgacaaat acgatttata taatttacac gaaattgctt	1800
ctggggggcgc acctctttcg aaagaagtcg gggaagcggg tgcaaaacgc ttccatcttc	1860
cagggatacg acaaggatat gggctcactg agactacatc agctattctg attacacccg	1920
agggggatga taaaccgggc gcggtcggta aagttgttcc attttttgaa gcgaagggtg	1980
tggatctgga taccgggaaa acgctgggcg ttaatcagag aggcgaatta tgtgtcagag	2040
gacctatgat tatgtccggg tatgtaaaca atccggaagc gaccaacgcc ttgattgaca	2100
aggatggatg gctacattct ggagacatag cttactggga cgaagacgaa cacttcttca	2160
tagttgaccg cttgaagtct ttaattaaat acaaaggata tcaggtggcc cccgctgaat	2220
tggaatcgat attgttataa caccccaaca tcttcgacgc gggcgtggca ggtcttcccg	2280
acgatgacgc cgggtgaactt cccgccgccg ttgttgtttt ggagcacgga aagacgatga	2340
cggaaaaaga gatcgtggat tacgtcgcca gtcaagtaac aaccgcgaaa aagttgcgcg	2400
gaggagtgtg gtttgtggac gaagtaccga aaggtcttac cggaaaactc gacgcaagaa	2460
aaatcagaga gatcctcata aaggccaaga agggcggaat gtccaaattg cgcggccgct	2520
aactcgagaa taaaatgagg aaattgcata gcattgtctg agtaggtgtc attctattct	2580
gggggggtggg gtggggcagg acagcaaggg ggaggattgg gaagacaata gcaggcatgc	2640
tgggggatgcg gtgggctcta tggcttctga ggcggaaaga accagctggg gctctagggg	2700
gtatccccac gcgccctgta gcggcgcatc aagcgcgggc ggtgtggtgg ttacgcgcag	2760
cgtgaccgct acacttgcca gcgccctagc gcccgctcct ttcgctttct tcccttcctt	2820
tctcgccacg ttcgccggct ttccccgtca agctctaaat cgggggctcc ctttaggggt	2880
ccgatttagt gctttacggc acctcgaccc caaaaaactt gattaggggtg atggttcacg	2940
tagtgggcca tcgccctgat agacggtttt tcgccctttg acgttggagt ccacgttctt	3000
taatagtgga ctcttggtcc aaactggaac aacactcaac cctatctcgg tctattcttt	3060
tgatttataa gggattttgc cgatttcggc ctattgggta aaaaatgagc tgatttaaca	3120
aaaatttaac gcgaattaat tctgtggaat gtgtgtcagt taggggtgtg aaagtcccca	3180
ggctccccag caggcagaag tatgcaaagc atgcatctca attagtcagc aaccagggtg	3240
ggaaagtccc caggctcccc agcaggcaga agtatgcaaa gcatgcatct caattagtca	3300
gcaaccatag tcccgcacct aactccgcc atcccgcccc taactccgcc cagttccgcc	3360
cattctccgc cccatggctg actaattttt tttatttatg cagaggccga ggccgcctct	3420

gcctctgagc tattccagaa gtagtgagga ggcttttttg gaggcctagg cttttgcaaa 3480  
 aagctcccgg gagcttgtat atccattttc ggatctgata agcacgtgat gaaaaagcct 3540  
 gaactcaccg cgacgtctgt cgagaagttt ctgacgaaa agttcgacag cgtctccgac 3600  
 ctgatgcagc tctcggaggg cgaagaatct cgtgctttca gcttcgatgt aggagggcgt 3660  
 ggatatgtcc tgcgggtaaa tagctgcgcc gatggtttct acaaagatcg ttatgtttat 3720  
 cggcactttg catcggccgc gctcccgatt ccggaagtgc ttgacattgg ggaattcagc 3780  
 gagagcctga cctattgcat ctcccgcctg gcacaggggtg tcacgttgca agacctgcct 3840  
 gaaaccgaac tgcccgtctgt tctgcagccg gtcgcggagg ccatggatgc gatcgtgcg 3900  
 gccgatctta gccagacgag cgggttcggc ccattcggac cgcaaggaat cgggtcaatac 3960  
 actacatggc gtgatttcat atgcgcgatt gctgatcccc atgtgtatca ctggcaaact 4020  
 gtgatggacg acaccgtcag tgcgtccgtc gcgcaggctc tcgatgagct gatgcttttg 4080  
 gccgaggact gccccgaagt ccggcacctc gtgcacgcgg atttcggctc caacaatgtc 4140  
 ctgacggaca atggccgcat aacagcggtc attgactgga gcgaggcgat gttcggggat 4200  
 tcccaatacg aggtcgccaa catcttcttc tggaggccgt ggttggttg tatggagcag 4260  
 cagacgcgct acttcgagcg gaggcattcc gagcttgacg gatcgccgcg gctccgggcg 4320  
 tatatgctcc gcattggtct tgaccaactc tatcagagct tggttgacgg caatttcgat 4380  
 gatgcagctt gggcgcaggg tcgatgcgac gcaatcgctc gatccggagc cgggactgtc 4440  
 gggcggtacac aaatcgcccg cagaagcgcg gccgtctgga ccgatggctg tgtagaagta 4500  
 ctgcgcgata gtggaaaccg acgccccagc actcgtccga gggcaaagga atagcacgtg 4560  
 ctacgagatt tcgattccac cgccgccttc tatgaaaggt tgggcttcgg aatcgttttc 4620  
 cgggacgcgc gctggatgat cctccagcgc ggggatctca tgcgtggagt cttcgccac 4680  
 cccaacttgt ttattgcagc ttataatggt tacaaataaa gcaatagcat cacaaatttc 4740  
 acaaataaag catttttttc actgcattct agttgtggtt tgtccaaact catcaatgta 4800  
 tcttatcatg tctgtatacc gtcgacctc agctagagct tggcgtaatc atggtcatag 4860  
 ctgtttcctg tgtgaaattg ttatccgctc acaattccac acaacatacg agccggaagc 4920  
 ataaagtgt aagcctgggg tgccaatga gtgagctaac tcacattaat tgcgttgccg 4980  
 tcaactgccc ctttccagtc gggaaacctg tcgtgccagc tgcattaatg aatcggccaa 5040  
 cgcgcgggga gaggcggttt gcgtattggg cgctcttcg cttcctcgt cactgactcg 5100  
 ctgcgctcgg tcgttcggct gcggcgagcg gtatcagctc actcaaaggc ggtaatacgg 5160  
 ttatccacag aatcagggga taacgcagga aagaacatgt gagcaaaagg ccagcaaaag 5220

gccaggaacc gtaaaaaggc cgcgttgctg gcgtttttcc ataggctccg cccccctgac	5280
gagcatcaca aaaatcgacg ctcaagtcag aggtggcgaa acccgacagg actataaaga	5340
taccaggcgt ttccccctgg aagctccctc gtgcgctctc ctgttccgac cctgccgctt	5400
accggatacc tgtccgcctt tctcccttcg ggaagcgtgg cgctttctca tagctcacgc	5460
tgtaggatc tcagttcggg gtaggtcgtt cgctccaagc tgggctgtgt gcacgaaccc	5520
cccgttcagc cggaccgtg cgccttatcc ggtaactatc gtcttgagtc caaccggta	5580
agacacgact tatcgccact ggcagcagcc actggtaaca ggattagcag agcgaggtat	5640
gtaggcggtg ctacagagtt cttgaagtgg tggcctaact acggctacac tagaagaaca	5700
gtattttgta tctgcgctct gctgaagcca gttaccttcg gaaaaagagt tggtagctct	5760
tgatccggca aacaaaccac cgctggtagc ggtttttttg tttgcaagca gcagattacg	5820
cgcagaaaaa aaggatctca agaagatcct ttgatctttt ctacggggtc tgacgctcag	5880
tggaacgaaa actcacgtta agggattttg gtcatgagat tatcaaaaag gatcttcacc	5940
tagatccttt taaattaaaa atgaagtttt aaatcaatct aaagtatata tgagtaaact	6000
tgggtctgaca gttaccaatg cttaatcagt gaggcaccta tctcagcgat ctgtctattt	6060
cgttcatcca tagttgcctg actccccgtc gtgtagataa ctacgatacg ggagggctta	6120
ccatctggcc ccagtgcctg aatgataccg cgagaccac gctcaccggc tccagattta	6180
tcagcaataa accagccagc cggaagggcc gagcgcagaa gtggtcctgc aactttatcc	6240
gcctccatcc agtctattaa ttgttgccgg gaagctagag taagtagttc gccagttaat	6300
agtttgcgca acgttggtgc cattgctaca ggcacgtgg tgtcacgctc gtcgtttggt	6360
atggcttcat tcagctccgg ttcccaacga tcaaggcgag ttacatgatc ccccatgttg	6420
tgcaaaaaag cggttagctc cttcggctct ccgatcgttg tcagaagtaa gttggccgca	6480
gtgttatcac tcatggttat ggcagcactg cataattctc ttactgtcat gccatccgta	6540
agatgctttt ctgtgactgg tgagtactca accaagtcac tctgagaata gtgtatgcgg	6600
cgaccgagtt gctcttgccc ggcgtcaata cgggataata ccgcgccaca tagcagaact	6660
ttaaaagtgc tcatcattgg aaaacgttct tcggggcgaa aactctcaag gatcttaccg	6720
ctgttgagat ccagttcgat gtaaccact cgtgcacca actgatcttc agcatctttt	6780
actttcacca gcgtttctgg gtgagcaaaa acaggaaggc aaaatgccgc aaaaaagga	6840
ataagggcga cacggaaatg ttgaatactc atactcttcc tttttcaata ttattgaagc	6900
atztatcagg gttattgtct catgagcgga tacatatttg aatgtattta gaaaaataaa	6960
caaatagggg ttccgcgcac atttccccga aaagtgccac ctgacgtc	7008

<210> 93  
 <211> 11693  
 <212> DNA  
 <213> Artificial

<220>

<223> Description of Artificial Sequence: Expression Vector

<400> 93

```

gttgacattg attattgact agttattaat agtaatcaat tacgggggtca ttagttcata      60
gcccatatat ggagttccgc gttacataac ttacggtaaa tggcccgctt ggctgaccgc      120
ccaacgaccc ccgcccattg acgtcaataa tgacgtatgt tcccatagta acgccaatag      180
ggactttcca ttgacgtcaa tgggtggagt atttacggta aactgcccac ttggcagtag      240
atcaagtgtg tcatatgccg agtccgcccc ctattgacgt caatgacggg aaatggcccc      300
cctggcatta tgcccagtag atgaccttac gggactttcc tacttggcag tacatctacg      360
tattagtcac cgctattacc atggtgatgc ggttttggca gtacaccaat gggcgtggat      420
agcggtttga ctcacgggga tttccaagtc tccaccccat tgacgtcaat gggagtttgt      480
tttggcacca aaatcaacgg gactttccaa aatgtcgtaa taaccccgcc ccgttgacgc      540
aaatgggagg taggcgtgta cgggtggagg tctatataag cagagctcgt ttagtgaacc      600
gtaagctttc ggcgcgccac ggtaccatgg gatccgaaga cgccaaaaac ataaagaaag      660
gcccggcgcc attctatcct ctagaggatg gaaccgctgg agagcaactg cataaggcta      720
tgaagagata cgccctgggt cctggaacaa ttgcttttac agatgcacat atcgagggtg      780
acatcacgta cgcggaatac ttcgaaatgt ccgttcggtt ggcagaagct atgaaacgat      840
atgggctgaa tacaatcac agaatcgctg tatgcagtga aaactctctt caattcttta      900
tgccgggtgtt gggcgcgtta tttatcggag ttgcagttgc gcccggaac gacatttata      960
atgaacgtga attgctcaac agtatgaaca tttcgcagcc taccgtagtg tttgtttcca     1020
aaaagggggtt gcaaaaaatt ttgaacgtgc aaaaaaatt accaataatc cagaaaatta     1080
ttatcatgga ttctaaaacg gattaccagg gatttcagtc gatgtacacg ttcgtcacat     1140
ctcatctacc tcccggtttt aatgaatacg attttgtacc agagtccttt gatcgtgaca     1200
aaacaattgc actgataatg aattcctctg gatctactgg gttacctaag ggtgtggccc     1260
ttccgcatag aactgcctgc gtcagattct cgcattgccg agatcctatt tttggcaatc     1320
aatcattcc ggatactgcg attttaagtg ttgttcatt ccatcacggg tttggaatgt     1380
ttactacact cggatatttg atatgtggat ttcgagtcgt cttaatgtat agatttgaag     1440
aagagctgtt tttacgatcc cttcaggatt acaaaattca aagtgcgttg ctagtacaa     1500
ccctattttc attcttcgcc aaaagcactc tgattgacaa atacgattta tctaatttac     1560

```

acgaaattgc ttctgggggc gcacctcttt cgaaagaagt cggggaagcg gttgcaaaac	1620
gcttccatct tccagggata cgacaaggat atggggtcac tgagactaca tcagctattc	1680
tgattacacc cgagggggat gataaacggg gcgcgggtcgg taaagttggt ccattttttg	1740
aagcgaaggt tgtggatctg gataccggga aaacgctggg cgттаатсag agaggcgaat	1800
tatgtgtcag aggacctatg attatgtccg gttatgtaaa caatccggaa gcgaccaacg	1860
ccttgattga caaggatgga tggctacatt ctggagacat agcttactgg gacgaagacg	1920
aacacttctt catagttgac cgcttgaagt ctttaattaa atacaaagga tatcaggtgg	1980
cccccgctga attggaatcg atattgttac aacaccccaa catcttcgac gcgggctgg	2040
caggtcttcc cgacgatgac gccggtgaac ttcccgcgcg cgttggtggt ttggagcacg	2100
gaaagacgat gacggaaaaa gagatcgtgg attacgtcgc cagtcaagta acaaccgcga	2160
aaaagttgcg cggaggagtt gtgtttgtgg acgaagtacc gaaaggtctt accggaaaac	2220
tcgacgcaag aaaaatcaga gagatcctca taaaggccaa gaagggcgga aagtcctaat	2280
tgcgcgccg ctaactcgag aataaacaag ttaacaacaa caattgcatt cattttatgt	2340
ttcaggttca gggggaggtg tgggaggttt tttaaagcaa gtaaaacctc taaaaatgtg	2400
gtatggctga ttatgatccg gctgcctcgc gcgtttcggg gatgacggtg aaaacctctg	2460
acacatgcag ctcccgga ga cggtcacagc ttgtctgtaa gcggatgccg ggagcagaca	2520
agcccgtcag gcgtcagcgg gtgttggcgg gtgtcggggc gcagccatga ggtcgactct	2580
agaggatcga tgccccgcc cggacgaact aaacctgact acgacatctc tgccccctct	2640
tcgcggggca gtgcatgtaa tcccttcagt tggttggtac aacttgccaa ctgggacctg	2700
ttccacatgt gacacggggg gggacaaac acaaaggggt tctctgactg tagttgacat	2760
ccttataaat ggatgtgcac atttgccaa actgagtggc tttcatcctg gagcagactt	2820
tgcagtctgt ggactgcaac acaacattgc ctttatgtgt aactcttggc tgaagctctt	2880
acaccaatgc tgggggacat gtacctcca gggggccagg aagactacgg gaggtacac	2940
caacgtcaat cagagggggc tgtgtagcta ccgataagcg gacctcaag agggcattag	3000
caatagtgtt tataaggccc ccttggttaac cctaaacggg tagcatatgc ttccgggta	3060
gtagtatata ctatccagac taaccctaata tcaatagcat atgttaccaca acgggaagca	3120
tatgctatcg aattaggggt agtaaaaggg tcctaaggaa cagcgatatc tcccaccca	3180
tgagctgtca cggttttatt tacatggggg caggattcca cgagggtagt gaaccatttt	3240
agtcacaagg gcagtggctg aagatcaagg agcgggcagt gaactctcct gaactctcgc	3300
ctgcttcttc attctccttc gtttagctaa tagaataact gctgagttgt gaacagtaag	3360
gtgtatgtga ggtgctcgaa aacaagggtt caggtgacgc cccagaata aaatttggac	3420

ggggggttca gtgggtggcat tgtgctatga caccaatata accctcacia accccttggg 3480  
 caataaatac tagtgtagga atgaaacatt ctgaatatct ttaacaatag aaatccatgg 3540  
 ggtgggggaca agccgtaaag actggatgtc catctcacac gaatttatgg ctatggggcaa 3600  
 cacataatcc tagtgcaata tgatactggg gttattaaga tgtgtcccag gcagggacca 3660  
 agacaggtga accatgttgt tacactctat ttgtaacaag gggaaagaga gtggacgcgc 3720  
 acagcagcgg actccactgg ttgtctctaa ccccccgaa aattaaacgg ggctccacgc 3780  
 caatggggcc cataaacaaa gacaagtggc cactcttttt tttgaaattg tggagtgggg 3840  
 gcacgcgtca gccccacac gccgcctgc ggttttggac tgtaaaataa ggggtgaata 3900  
 acttggtga ttgtaacccc gctaaccact gcggtcaaac cacttgcca caaaaccact 3960  
 aatggcaccc cggggaatac ctgcataagt aggtgggcgc gccaaagatag gggcgcgatt 4020  
 gctgcgatct ggaggacaaa ttacacacac ttgcgcctga gcgccaagca cagggttgtt 4080  
 ggtcctcata ttcacgaggt cgctgagagc acggtgggct aatgttgcca tgggtagcat 4140  
 atactacca aatatctgga tagcatatgc taccctaacc tatatctggg tagcataggc 4200  
 taccctaacc tatatctggg tagcatatgc taccctaacc tatatctggg tagtatatgc 4260  
 taccctaatt tatatctggg tagcataggc taccctaacc tatatctggg tagcatatgc 4320  
 taccctaacc tatatctggg tagtatatgc taccctaacc tgtatccggg tagcatatgc 4380  
 taccctaata gagattaggg tagtatatgc taccctaatt tatatctggg tagcatatac 4440  
 taccctaata tctggtagc atatgctatc ctaattctata tctgggtagc atatgctatc 4500  
 ctaattctata tctgggtagc ataggctatc ctaattctata tctgggtagc atatgctatc 4560  
 ctaattctata tctgggtagt atatgctatc ctaatttata tctgggtagc ataggctatc 4620  
 ctaattctata tctgggtagc atatgctatc ctaattctata tctgggtagt atatgctatc 4680  
 ctaattctgta tccgggtagc atatgctatc ctcattgata tacagtcagc atatgatacc 4740  
 cagtagtaga gtgggagtgct taccctttgc atatgcgcgc accctcccaag ggggcgtgaa 4800  
 ttttcgctgc ttgtcctttt cctgctgggt gctccattc ttaggtgaat ttaaggaggc 4860  
 caggctaaag ccgtgcgatg tctgattgct caccaggtaa atgtcgctaa tgttttccaa 4920  
 cgcgagaagg tggtgagcgc ggagctgagt gacgtgacaa catgggtatg cccaattgcc 4980  
 catgtgtgt actggggatt tattcttttag tgcgggggaa tacacggctt ttaatacgat 5040  
 tgagggcgtc tccataacaag ttacatcact cctgcccttc ctcacctca tctccatcac 5100  
 ctccttcac tccgtcatct ccgtcatcac cctccgcggc agcccttcc accatagggtg 5220

gaaaccaggg aggcaaatct actccatcgt caaagctgca cacagtcacc ctgatattgc	5280
aggtaggagc gggctttgtc ataacaaggt ccttaatcgc atccttcaaa acctcagcaa	5340
atatatgagt ttgtaaaaag accatgaaat aacagacaat ggactccctt agcggggccag	5400
gttgtggggc ggggtccaggg gccattccaa aggggagacg actcaatggg gtaagacgac	5460
attgtggaat agcaagggca gttcctcgcc ttaggttgta aaggagggtc ttactacctc	5520
catatacgaa cacaccggcg acccaagttc cttcgtcggt agtcctttct acgtgactcc	5580
tagccaggag agctcttaaa ccttctgcaa tgttctcaaa tttcgggttg gaacctcctt	5640
gaccacgatg cttttccaaa ccacctcct tttttgcgcc ctgcctccat cacctgacc	5700
ccgggggtcca gtgcttgggc cttctcctgg gtcactcgcg gggccctgct ctatcgctcc	5760
cgggggcacg tcaggctcac catctgggcc accttcttgg tggattcaa aataatcggc	5820
ttccctaca ggggtgaaaa atggccttct acctggaggg ggctgcgcg gtggagaccc	5880
ggatgatgat gactgactac tgggactcct gggcctcttt tctccacgtc cactgacctc	5940
ccccctggct ctttcacgac ttccccctt ggctctttca cgtcctctac cccggcggcc	6000
tccactacct cctcgacccc ggccctccact acctcctcga cccggcctc cactgcctcc	6060
tcgaccccg cctccacctc ctgctcctgc cctcctgct cctgcccctc ctctgctcc	6120
tgcccctcct gcccctcctg ctctgcccc tctgcccct cctgctcctg cccctcctgc	6180
ccctcctgct cctgcccctc ctgcccctcc tctgctcct gccctcctg cccctcctcc	6240
tgctcctgcc cctcctgccc ctctgctcc tgcccctcct gccctcctg ctctgcccc	6300
tctgcccct cctgctcctg cccctcctgc tctgcccct cctgctcctg cccctcctgc	6360
tctgcccct cctgcccctc ctgcccctcc tctgctcct gccctcctg ctctgcccc	6420
tctgcccct cctgcccctc ctgctcctgc cctcctcct gctcctgccc ctctgcccc	6480
tctgcccct cctcctgctc ctgcccctcc tgcccctcct cctgctcctg cccctcctcc	6540
tgctcctgcc cctcctgccc ctctgcccc tctcctgct cctgcccctc ctgcccctcc	6600
tctgctcct gccctcctc ctgctcctgc cctcctgccc cctcctgccc ctctcctgc	6660
tctgcccct cctcctgctc ctgcccctcc tgcccctcct gccctcctg cccctcctcc	6720
tgctcctgcc cctcctcctg ctctgcccc tctgctcct gccctcccg ctctgctcc	6780
tgctcctgtt ccacgtggg tccctttgca gccaatgcaa cttggacgtt tttggggctt	6840
ccggacacca tctctatgtc ttggccctga tctgagccg cccggggctc ctggtcttcc	6900
gcctcctcgt cctcgtcctc ttccccgtcc tcgtccatgg ttatcaccce ctcttctttg	6960
aggctcactg ccgcccggagc cttctgggtcc agatgtgtct cccttctctc ctaggccatt	7020
tccaggctct gtacctggcc cctcgtcaga catgattcac actaaaagag atcaatagac	7080

atcttttatta gacgacgctc agtgaatata gggagtgcag actcctgccc cctccaacag	7140
cccccccacc ctcatccctt tcatggctgc tgtcagacag atccaggtct gaaaattccc	7200
catcctccga accatcctcg tcctcatcac caattactcg cagcccggaa aactcccgtc	7260
gaacatcctc aagatttgcg tcctgagcct caagccaggc ctcaaattcc tegtccccct	7320
ttttgctgga cggtagggat ggggattctc gggacccctc ctcttctct tcaaggtcac	7380
cagacagaga tgctactggg gcaacggaag aaaagctggg tgcggcctgt gaggatcagc	7440
ttatcgatga taagctgtca aacatgagaa ttcttgaaga cgaaagggcc tegtgatacg	7500
cctatTTTTTA taggttaatg tcatgataat aatggtttct tagacgtcag gtggcacttt	7560
tcggggaaat gtgcgcggaa cccctatttg tttatttttc taaatacatt caaatatgta	7620
tccgctcatg agacaataac cctgataaat gcttcaataa tattgaaaaa ggaagagtat	7680
gagtattcaa catTTTccgtg tcgcccttat tccctTTTTT gcggcatttt gccttctctg	7740
ttttgctcac ccagaaacgc tggtgaaagt aaaagatgct gaagatcagt tgggtgcacg	7800
agtgggttac atcgaactgg atctcaacag cggtaaagtc cttgagagtt ttcgccccga	7860
agaacgtttt ccaatgatga gcacttttaa agttctgcta tgtggcgcggt tattatcccc	7920
tgttgacgcc gggcaagagc aactcggctc ccgcatacac tattctcaga atgacttggg	7980
tgagtactca ccagtcacag aaaagcatct tacggatggc atgacagtaa gagaattatg	8040
cagtgtctgcc ataaccatga gtgataaac tgcggccaac ttactttctga caacgatcgg	8100
aggaccgaag gagctaaccg cttttttgca caacatgggg gatcatgtaa ctgccttga	8160
tcgttgggaa ccggagctga atgaagccat accaaacgac gagcgtgaca ccacgatgcc	8220
tgcagcaatg gcaacaacgt tgcgcaaact attaactggc gaactactta ctctagcttc	8280
ccggcaacaa ttaatagact ggatggaggc ggataaagtt gcaggaccac ttctgcgctc	8340
ggcccttccg gctggctggg ttattgctga taaatctgga gccggtgagc gtgggtctcg	8400
cggtatcatt gcagcactgg gccagatgg taagccctcc cgtatcgtag ttatctacac	8460
gacggggagt caggcaacta tggatgaacg aaatagacag atcgtgaga taggtgcctc	8520
actgattaag cattggtaac tgtcagacca agtttactca tatatacttt agattgattt	8580
aaaacttcat ttttaattta aaaggatcta ggtgaagatc ctttttgata atctcatgac	8640
caaaatccct taacgtgagt tttcgttcca ctgagcgtca gacccgtag aaaagatcaa	8700
aggatcttct tgagatcctt tttttctgcg cgtaatctgc tgcttgcaaa caaaaaaacc	8760
accgctacca gcggtgggtt gtttgccgga tcaagagcta ccaactcttt ttccgaaggt	8820
aactggcttc agcagagcgc agataccaaa tactgtcctt ctagtgtagc cgtaggttagg	8880

ccaccacttc aagaactctg tagcaccgcc tacatacctc gctctgctaa tcctgttacc 8940  
 agtggctgct gccagtggcg ataagtcgtg tcttaccggg ttggactcaa gacgatagtt 9000  
 accggataag gcgagcggt cgggctgaac ggggggttcg tgcacacagc ccagcttgga 9060  
 gcgaacgacc tacaccgaac tgagatacct acagcgtgag ctatgagaaa gcgccacgct 9120  
 tcccgaaggg agaaaggcgg acaggtatcc ggtaagcggc agggtcggaa caggagagcg 9180  
 cacgaggag cttccagggg gaaacgcctg gtatctttat agtcctgtcg ggtttcgcca 9240  
 cctctgactt gagcgtcgat ttttgtgatg ctcgtcaggg gggcggagcc tatggaaaaa 9300  
 cgccagcaac gcggcctttt tacggttcct ggccttttgc tggccttgaa gctgtccctg 9360  
 atggctcgta tctacctgcc tggacagcat ggcctgcaac gcgggcatcc cgatgccgcc 9420  
 ggaagcgaga agaatacataa tggggaaggc catccagcct cgcgtcgga acgccagcaa 9480  
 gacgtagccc agcgcgtcgg ccccgagatg cgccgcgtgc ggctgctgga gatggcggac 9540  
 gcgatggata tgttctgcca agggttgggt tgcgcattca cagttctccg caagaattga 9600  
 ttggctccaa ttcttgaggt ggtgaatccg ttagcgaggt gccgccctgc ttcattccccg 9660  
 tggcccgttg ctgcgctttg ctggcggtgt ccccggaaga aatatatttg catgtcttta 9720  
 gttctatgat gacacaaacc ccgccagcg tcttgtcatt ggcgaattcg aacacgcaga 9780  
 tgcagtcggg gcggcgcggt ccgaggtcca cttcgcataat taaggtagcg cgtgtggcct 9840  
 cgaacaccga gcgacctgc agcgaccgc ttaacagcgt caacagcgtg ccgcagatcc 9900  
 cggggggcaa tgagatatga aaaagcctga actcaccgcg acgtctgtcg agaagtttct 9960  
 gatcgaaaag ttcgacagcg tctccgacct gatgcagctc tcggagggcg aagaatctcg 10020  
 tgctttcagc ttcgatgtag gagggcggtg atatgtcctg cgggtaaata gctgcgccga 10080  
 tggtttctac aaagatcgtt atgtttatcg gcactttgca tcggccgcgc tcccgattcc 10140  
 ggaagtgctt gacattgggg aattcagcga gagcctgacc tattgcatct cccgccgtgc 10200  
 acaggggtgc acgttgcaag acctgcctga aaccgaactg cccgctgttc tgcagccggt 10260  
 cgcgagggcc atggatgcga tcgctgcggc cgatcttagc cagacgagcg ggttcggccc 10320  
 attcggaccg caaggaatcg gtcaatacac tacatggcgt gatttcataat gcgcgattgc 10380  
 tgatcccat gtgtatcact ggcaaactgt gatggacgac accgtcagtg cgtccgtcgc 10440  
 gcaggctctc gatgagctga tgctttgggc cgaggactgc cccgaagtcc ggcacctcgt 10500  
 gcacgcggat ttcggctcca acaatgtcct gacggacaat ggccgcataa cagcggcat 10560  
 tgactggagc gaggcgatgt tcggggattc ccaatacgag gtcgccaaca tcttctctg 10620  
 gaggccgtgg ttggcttgta tggagcagca gacgcgtac ttcgagcgga ggcatccgga 10680  
 gcttgagga tcgccgcggc tccggcgta tatgctccgc attggtcttg accaactcta 10740

```

tcagagcttg gttgacggca atttcgatga tgcagcttgg gcgcagggtc gatgcgacgc 10800
aatcgtccga tccggagccg ggactgtcgg gcgtacacaa atcgcccgcga gaagcgccggc 10860
cgtctggacc gatggctgtg tagaagtact cgccgatagt ggaaaccgac gccccagcac 10920
tcgtccggat cgggagatgg gggaggctaa ctgaaacacg gaaggagaca ataccggaag 10980
gaaccgcgc tatgacggca ataaaaagac agaataaaac gcacgggtgt tgggtcgttt 11040
gttcataaac gcgggggttcg gtcccagggc tggcactctg tcgatacccc accgagaccc 11100
cattggggcc aatacgcccg cgttttcttc ttttccccac cccaccccc aagttcgggt 11160
gaaggcccg ggctcgcagc caacgtcggg gcggcaggcc ctgccatagc cactggcccc 11220
gtgggttagg gacgggggtcc cccatgggga atggtttatg gttcgtgggg gttattattt 11280
gggcgttgcg tggggtcagg tccacgactg gactgagcag acagacccat ggtttttgga 11340
tggcctgggc atggaccgca tgtactggcg cgacacgaac accgggcgtc tgtggctgcc 11400
aaacaccccc gacccccaaa aaccaccgcg cggatttctg gcgtgccaaag ctagtcgacc 11460
aattctcatg tttgacagct tatcatcgca gatccgggca acgttggtgc cattgctgca 11520
ggcgcagaac tggtaggtat ggaagatcta tacattgaat caatattggc aattagccat 11580
attagtcatt ggttatatag cataaatcaa tattggctat tggccattgc atacgttgta 11640
tctatatcat aatatgtaca tttatattgg ctcatgtcca atatgaccgc cat 11693

```

```

<210> 94
<211> 4825
<212> DNA
<213> Artificial

```

```
<220>
```

```
<223> Description of Artificial Sequence: Expression vector
```

```

<400> 94
gacggatcgg gagatctccc gatccctat ggtgcactct cagtacaatc tgctctgatg 60
ccgcatagtt aagccagtat ctgctccctg cttgtgtgtt ggaggtcgct gagtagtgcg 120
cgagcaaaat ttaagctaca acaaggcaag gcttgaccga caattgcatg aagaatctgc 180
ttaggggttag gcgttttgcg ctgcttcgcg atgtacgggc cagatatacg cgttgacatt 240
gattattgac tagttattaa tagtaatcaa ttacgggggc attagttcat agcccatata 300
tggagttccg cgttacataa cttacggtaa atggcccgc tggctgaccg cccaacgacc 360
cccgccatt gacgtcaata atgacgtatg ttcccatagt aacgcccaata gggactttcc 420
attgacgtca atgggtggag tatttacggg aaactgccca cttggcagta catcaagtgt 480
atcatatgcc aagtacgcc cctattgacg tcaatgacgg taaatggccc gcctggcatt 540

```

atgcccagta catgacctta tgggactttc ctacttggca gtacatctac gtattagtca	600
tcgctattac catggtgatg cggtttttggc agtacatcaa tgggcgtgga tagcggtttg	660
actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc	720
aaaatcaacg ggacttttcca aaatgtcgta acaactccgc cccattgacg caaatgggcg	780
gtaggcgtgt acggtgggag gtctatataa gcagagctct ctggctaact aagctttcgg	840
cgcgccgagg taccatggga tccgaagacg ccaaaaacat aaagaaaggc ccggcgccat	900
tctatcctct agaggatgga accgctggag agcaactgca taaggctatg aagagatacg	960
ccctggttcc tggaacaatt gcttttacag atgcacatat cgaggatgaac atcacgtacg	1020
cgaataactt cgaaatgtcc gttcggtttg cagaagctat gaaacgatat gggctgaata	1080
caaatcacag aatcgtcgta tgcagtgaat actctcttca attctttatg ccgggtgttg	1140
gcgcgttatt tatcggagtt gcagttgcgc ccgcgaacga catttataat gaacgtgaat	1200
tgctcaacag tatgaacatt tcgcagccta ccgtagtggt tgtttccaaa aaggggttgc	1260
aaaaaatatt gaacgtgcaa aaaaaattac caataatcca gaaaattatt atcatggatt	1320
ctaaaacgga ttaccagggg tttcagtcga tgtacacggt cgtcacatct catctacctc	1380
ccggttttta tgaatacgat tttgtaccag agtcctttga tcgtgacaaa acaattgcac	1440
tgataatgaa ttctcttgga tctactgggt tacctaaggg tgtggccctt ccgcatagaa	1500
ctgcctgcgt cagattctcg catgccagag atcctatatt tggcaatcaa atcattccgg	1560
atactgcgat tttaagtgtt gttccattcc atcacgggtt tggaatgttt actacactcg	1620
gatatttgat atgtggattt cgagtcgtct taatgtatag atttgaagaa gagctgtttt	1680
tacgatccct tcaggattac aaaattcaaa gtgcgttgct agtaccaacc ctattttcat	1740
tcttcgccaa aagcactctg attgacaaat acgatttatc taatttacac gaaattgctt	1800
ctggggggcg acctctttcg aaagaagtcg ggggaagcgt tgcaaaacgc ttccatcttc	1860
cagggatagc acaaggatat gggctcactg agactacatc agctattctg attacacccg	1920
aggggggatga taaaccgggc gcggtcggta aagttgttcc attttttgaa gcgaagggtg	1980
tggatctgga taccgggaaa acgctgggcg ttaatcagag aggcgaatta tgtgtcagag	2040
gacctatgat tatgtccggt tatgtaaaca atccggaagc gaccaacgcc ttgattgaca	2100
aggatggatg gctacattct ggagacatag ctactggga cgaagacgaa cacttcttca	2160
tagttgaccg cttgaagtct ttaattaaat acaaaggata tcagggtggcc cccgctgaat	2220
tggaatcgat attgttacia caccocaaca tcttcgacgc gggcgtggca ggtcttcccg	2280
acgatgacgc cggatgaactt cccgccgcgc ttgttgtttt ggagcacgga aagacgatga	2340
cggaaaaaga gatcgtggat tacgtcgcca gtcaagtaac aaccgcgaaa aagttgcgcg	2400

gaggagttgt gtttgtggac gaagtaccga aaggtcttac cggaaaactc gacgcaagaa	2460
aaatcagaga gatcctcata aaggccaaga agggcggaaa gtccaaattg cgcggccgct	2520
aactcgagaa taaaatgagg aaattgcatc gcattgtctg agtaggtgtc attctattct	2580
ggggggtggg gtggggcagg acagcaaggg ggaggattgg gaagacaata gcaggcatgc	2640
tggggatgcg gtgggctcta tggcttctga ggcggaaaga accagctggg gctctagggg	2700
gtatccccac gcgccctgta gcggcgcatt aagcgcggcg ggtgtggtgg ttacgcgcag	2760
cgtgaccgct acacttgcca gcgccctagc gcccgctcct ttcgctttct tcccttcctt	2820
tctcgccacg ttcgccggct ttccccgtca agctctaaat cgggggtccc tttagggttc	2880
cgatttagtg ctttacggca cctcgacccc aaaaaacttg attaggggtga tggttcacgt	2940
acctagaagt tcctattccg aagttcctat tctctagaaa gtataggaac ttccttggcc	3000
aaaaagcctg aactcaccgc gacgtctgtc gagaagtttc tgatcgaaaa gttcgacagc	3060
gtctccgacc tgatgcagct ctcgaggggc gaagaatctc gtgctttcag cttcgatgta	3120
ggagggcggtg gatatgtcct gcgggtaaat agctgcgcgc atggtttcta caaagatcgt	3180
tatgtttatc ggcactttgc atcggccgcg ctcccgattc cggaagtgtc tgacattggg	3240
gaattcagcg agagcctgac ctattgcatc tcccgccgtg cacaggggtgt cacgttgcaa	3300
gacctgcctg aaaccgaact gcccgctgtt ctgcagccgg tcgcggaggc catggatgcg	3360
atcgctgcgg ccgatcttag ccagacgagc gggttcggcc cattcggacc gcaaggaatc	3420
ggtcaataca ctacatggcg tgatttcata tgcgcgattg ctgatcccca tgtgtatcac	3480
tggcaaaactg tgatggacga caccgtcagt gcgtccgtcg cgcaggctct cgatgagctg	3540
atgctttggg ccgaggactg ccccgaagtc cggcacctcg tgcagcaaac aaaccaccgc	3600
tggtagcggg ttttttgttt gcaagcagca gattacgcgc agaaaaaag gatctcaaga	3660
agatcctttg atcttttcta cggggctctga cgctcagtgg aacgaaaact cacgttaagg	3720
gattttgggtc atgagattat caaaaaggat cttcacctag atccttttaa attaaaaatg	3780
aagttttaaa tcaatctaaa gtatatatga gtaaacttgg tctgacagtt accaatgctt	3840
aatcagtgag gcacctatct cagcgatctg tctatttcgt tcatccatag ttgcctgact	3900
ccccgtcgtg tagataacta cgatacggga gggcttacca tctggcccca gtgctgcaat	3960
gataccgcga gaccacgct caccggctcc agatttatca gcaataaacc agccagccgg	4020
aagggccgag cgcagaagtg gtcctgcaac tttatccgcc tccatccagt ctattaattg	4080
ttgccgggaa gctagagtaa gtagttcgcc agttaatagt ttgcgcaacg ttggtgccat	4140
tgctacaggc atcggtgtgt cacgtcgtc gtttggtatg gcttcattca gctccggttc	4200

ccaacgatca aggcgagtta catgatcccc catgttgtgc aaaaaagcgg ttagctcctt	4260
cggtcctccg atcgttgtca gaagtaagtt ggccgcagtg ttatcactca tggttatggc	4320
agcactgcat aattctctta ctgtcatgcc atccgtaaga tgcttttctg tgactgggtga	4380
gtactcaacc aagtcattct gagaatagtg tatgcggcga ccgagttgct cttgcccggc	4440
gtcaatacgg gataataccg cgccacatag cagaacttta aaagtgetca tcattggaaa	4500
acgttcttcg gggcgaaaac tctcaaggat cttaccgctg ttgagatcca gttcgatgta	4560
accactcgt gcacccaact gatcttcagc atcttttact ttcaccagcg tttctgggtg	4620
agcaaaaaca ggaaggcaaa atgccgcaaa aaaggggaata agggcgacac ggaaatgttg	4680
aatactcata ctcttccttt ttcaatatta ttgaagcatt tatcagggtt attgtctcat	4740
gagcggatac atatttgaat gtatttagaa aaataaacia ataggggttc cgcgcacatt	4800
tccccgaaaa gtgccacctg acgtc	4825